



# Texas Chronic Disease Burden Report

April 2010

Publication #E81-11194



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The authors would like to give special thanks to the following individuals for their technical support:

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# Introduction

Chronic diseases are a major cause of disability and death in Texas as well as in the United States and the world. In fact, heart disease, cancer, and stroke account for greater than 50 percent of all deaths per year in Texas. Overall, all the chronic diseases cause 60-70 percent of the deaths in Texas, nationally, and globally.<sup>1,2</sup> Modifiable health risk behaviors (lack of physical activity, poor nutrition, tobacco use, and excessive alcohol consumption) are largely responsible for the illness, suffering, and premature death related to chronic diseases. The World Health Organization has estimated that if the major risk factors for chronic disease were eliminated, at least 80 percent of all heart disease, stroke, and type 2 diabetes would be prevented, and more than 40 percent of cancer cases would be prevented.

Chronic diseases are defined by the Centers for Disease Control and Prevention as those diseases that are prolonged, do not resolve spontaneously, and for which a complete cure is rarely achieved.<sup>3</sup> The Texas Department of State Health Services monitors diseases that fit this broad definition of chronic diseases; are preventable; and pose a significant burden in deaths, disabilities, and costs.

Health disparities are differences in the prevalence, deaths, burden of diseases and other adverse health conditions or outcomes that exist among specific population groups in the United States. Health disparities can affect population groups based on gender, age, ethnicity, socioeconomic status, geography, sexual orientation, disability or special health care needs. Chronic disease surveillance systems collect specific data to gain better understanding of how social, economic, and other factors can impact health.

This report was prepared by the Texas Department of State Health Services' Health Promotion and Chronic Disease Prevention Section to monitor outcomes for certain chronic disease conditions and associated behavioral risk factors in Texas. The content of this report provides information on deaths, prevalence, trends over time, hospitalizations, and cost. The chronic diseases included in this report are ischemic heart disease, stroke, lung cancer, female breast cancer, cervical cancer, colorectal cancer, prostate cancer, asthma, arthritis, and diabetes mellitus. This report updates the previous *Chronic Disease in Texas: A Surveillance Report of Disease Indicators* published in 2008.

## Data Sources

### Death Data

The death tabulations provided in this report are for Texas residents and are obtained from the Data Management Team, Center for Health Statistics (CHS). There were two significant changes that occurred related to death data starting in 1999. The coding system used for establishing cause of death was changed from the 9th Revision of the International Classification of Diseases (ICD-9) to the 10th Revision (ICD-10). All causes listed on a death certificate are categorized and coded according to this guide. An underlying cause of death is then determined through the use of a computer algorithm, Automated Classification of Medical Entities (ACME), developed by the National Center for Health Statistics. The second significant change was the use of the 2000 U.S. population as the standard for age adjustment, which replaces the 1940 U.S. standard population.

ICD-10 codes used in this report for death data:

Major cardiovascular disease: I00-I99

Ischemic heart disease: I200-I25

Stroke: I60-I69

Congestive heart failure: I50

Hypertension: I10-I15

Diabetes: E10-E14

Lung Cancer: C34

Cervical Cancer: C53

Female Breast Cancer: C50

Colorectal Cancer: C18-C21

Prostate Cancer: C61

Arthritis: M00-M25

Asthma: J45

For more information visit <http://www.dshs.state.tx.us/VS/default.shtm>.

### Behavioral Risk Factor Surveillance System

Behavioral risk factors play a prominent role in causing chronic disease, therefore, finding ways to help people adopt healthier behaviors may be the most promising point of prevention and intervention. Surveillance of behavioral risk factors can provide the basis for both developing and evaluating programs designed to reduce the prevalence of unhealthy behaviors. Data on behavioral risk factors are necessary for formulating prevention and intervention strategies, justifying resources to support those strategies, and proposing new policies or legislation. The Behavioral Risk Factor Surveillance System (BRFSS) is an ongoing telephone survey of adult Texans aged 18 and older using a standard protocol and standard interviewing methods.

For more information visit <http://www.dshs.state.tx.us/chs/brfss/>.

### Youth Risk Behavior Survey

The Texas Youth Risk Behavior Survey (YRBS) provides a wealth of data for state and local health and education officials to a) implement or modify programs to address the behaviors of young people; b) create awareness of the extent of risk behaviors among young people; c) promote state-level changes that support specific health education curricula and coordinated school health programs; and d) provide evidence-based data to support the need for health education. The YRBS was designed to focus the nation on behaviors among youth related to the leading causes of death and disability among both youth and adults and to assess how these risk behaviors change over time.

The survey is administered to a selection of public high school students in Texas. The results are representative of all students in grades 9-12.

For more information visit <http://www.dshs.state.tx.us/chs/yrbs/default.shtm>.

## Hospital Discharge Data

Hospital discharge data are a rich resource of information about the patterns of care, public health burden, and the costs associated with chronic disease disability. The Texas Health Care Information Collection (THCIC) is responsible for collecting hospital discharge data from all state licensed hospitals except those that are statutorily exempt from the reporting requirement. All reporting hospitals are required to submit discharged inpatient claims data on a quarterly basis, using the uniform bill (UB-92) format.

The coding system used for hospitalizations is the ICD-9. All hospital discharges are categorized and coded according to this guide.

ICD-9 codes used in this report for hospital discharge data:

Ischemic heart disease: 410-414	Female cervical cancer: 180
Hemorrhagic stroke: 430-432	Female breast cancer: 174
Ischemic stroke: 436-438, 433, and 434	Colorectal cancer: 153, 154
Congestive heart failure: 428	Prostate cancer: 185
Hypertension: 401-405	Arthritis: 710-719
Diabetes: 250	Osteoarthritis: 715
All cancer: 140-209	Asthma: 493
Lung cancer: 162	Alzheimer's: 331

Primary payment source categories include Medicare, Medicaid, commercial, self-pay, and other. Self-pay includes charity. Other includes Title V, worker's compensation, other federal program, other non-federal program, and veteran administration plan.

For more information visit <http://www.dshs.state.tx.us/thcic/default.shtm>.

## Statistical Significance

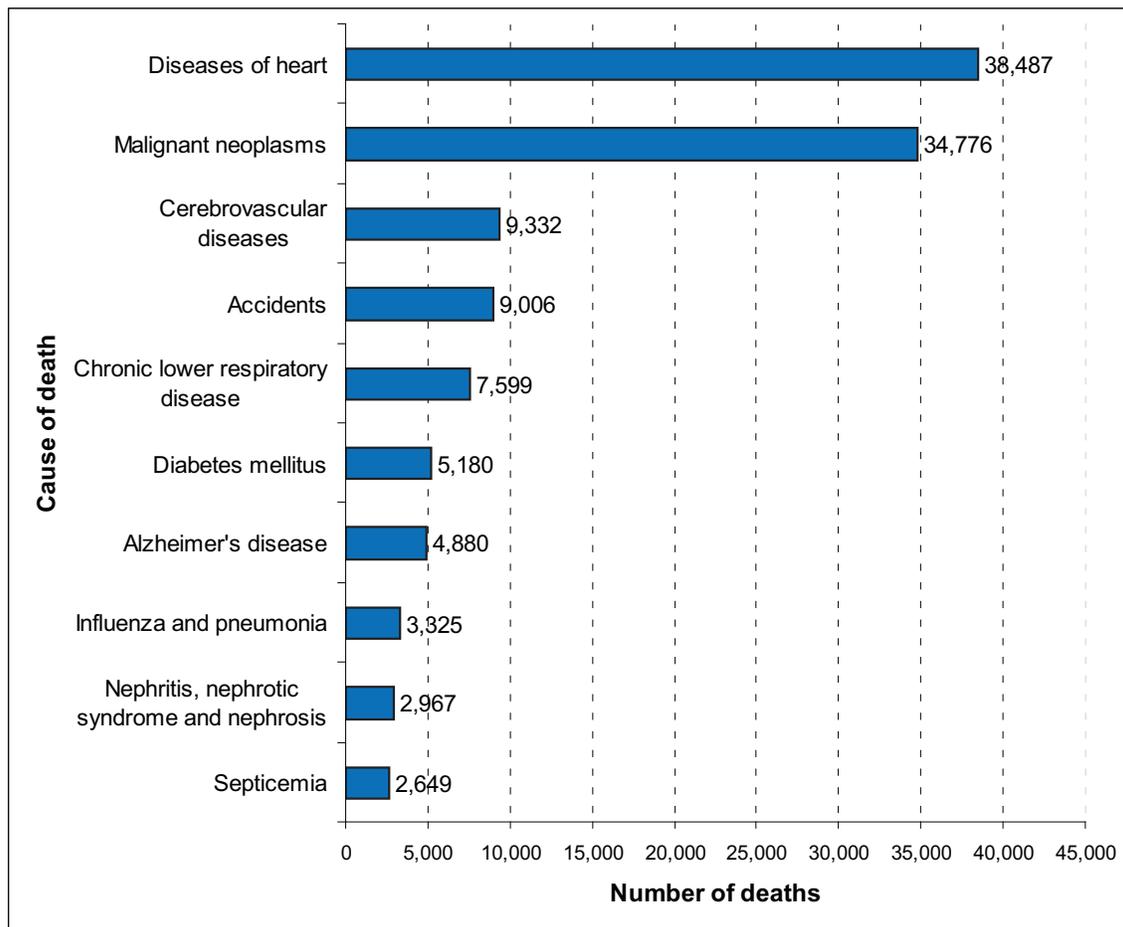
A confidence interval is a computed interval of values that, with a given probability, is said to contain the true value of the population parameter. 95% CIs are used in this report to determine statistical significance. The interpretation of the 95% means there is a 95% chance that the true value of the estimate lies within the range of the interval.

# Death

# Leading Causes of Death

Because of the changing nature of illness and death, Americans are no longer dying from the same diseases as they did in previous generations. In 1900, pneumonia and influenza, tuberculosis and gastritis, enteritis and colitis were the three leading causes of death, accounting for nearly one-third of all deaths. As sanitation, nutrition, and living conditions improved and medical technology advanced, deaths from infectious diseases declined steadily and children and young adults survived longer. As a result, deaths from chronic conditions have increased. Today, heart disease, cancer, and stroke are the three leading causes of death.

**Figure 1. Leading Causes of Death, Texas, 2006**

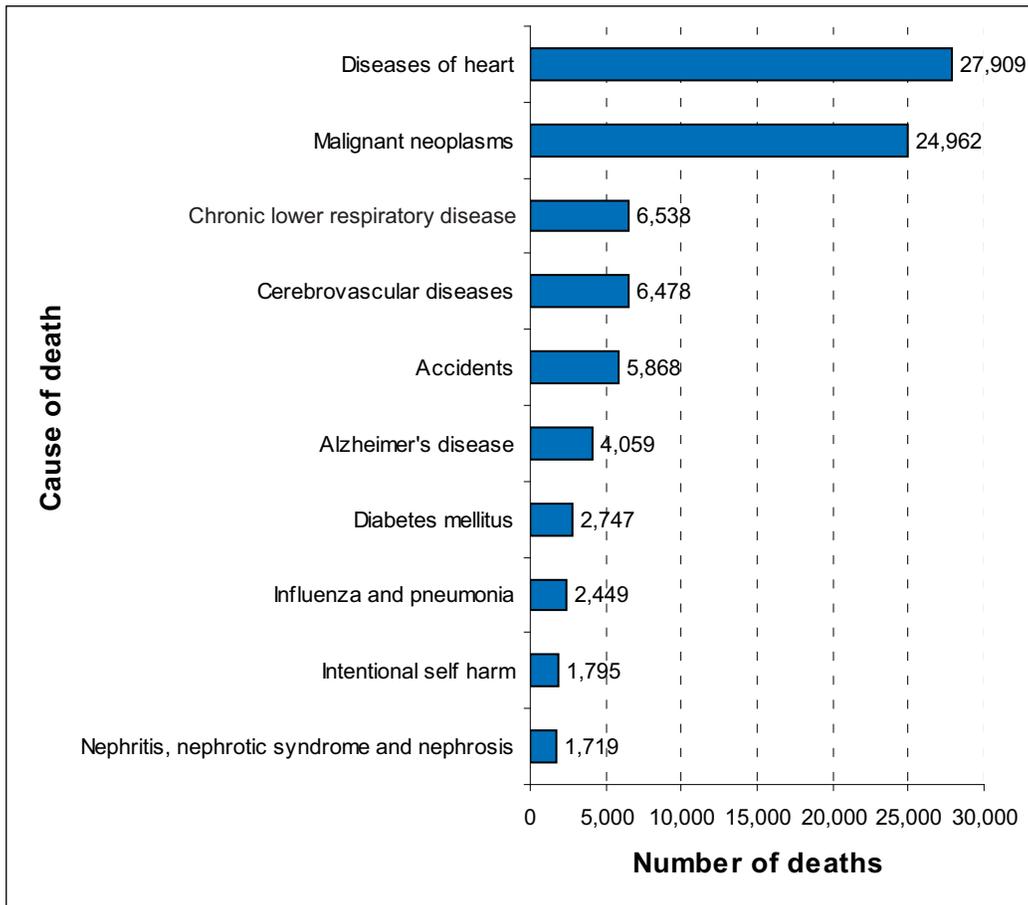


A total of 156,525 Texas residents died in 2006. Of those, 118,201 died from the above leading causes. The leading cause of death, diseases of the heart, accounted for 24.6 percent of all deaths, while the second most common cause of death, malignant neoplasms, accounted for 22.2 percent. Cerebrovascular diseases, accidents, and chronic lower respiratory diseases ranked third, fourth, and fifth respectively. Together, the five leading causes of death represented 63.4 percent of all deaths in 2006.

*Data source: CHS, Texas Department of State Health Services*

# Leading Causes of Death

**Figure 2. Leading Causes of Death Among Whites, Texas, 2006**

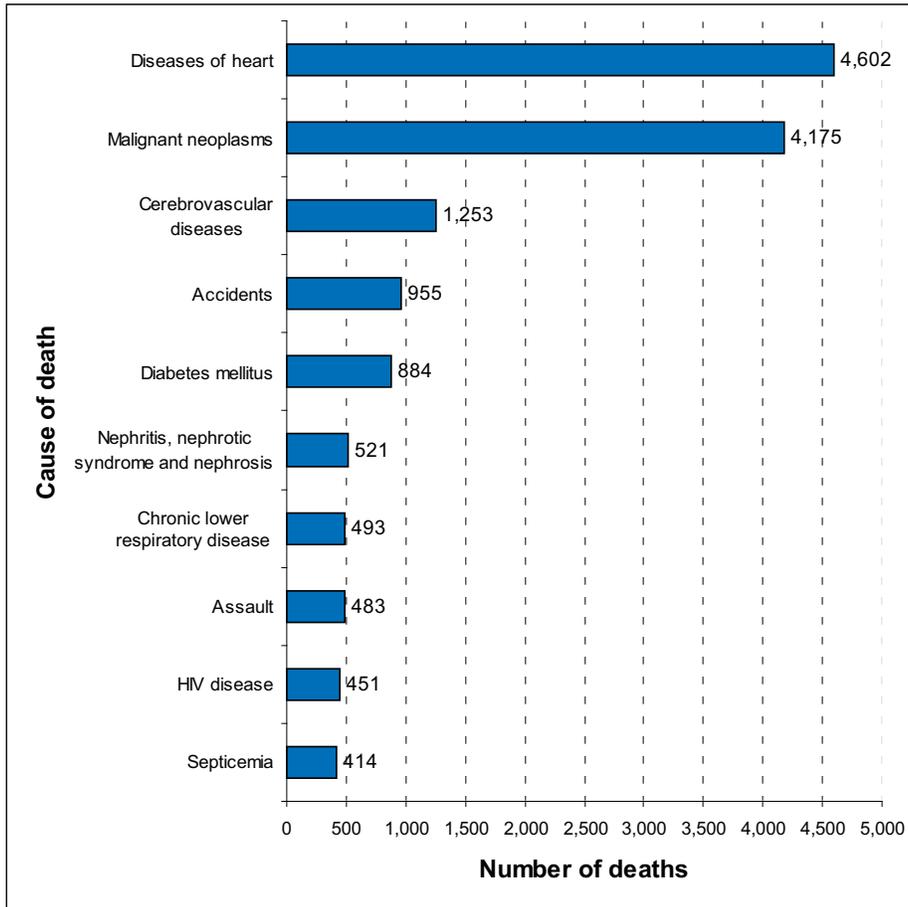


A total of 109,394 white Texas residents died in 2006. Of those, 84,524 died from the above leading causes. The leading cause of death, diseases of the heart, was responsible for 25.5 percent of all white deaths while malignant neoplasms, the second most common cause of death, accounted for 22.8 percent. Chronic lower respiratory disease ranked third and accounted for 6.0 percent of all deaths among white residents in Texas. Cerebrovascular diseases ranked fourth and accounted for 5.9 percent of all deaths among whites. The top five leading causes of death accounted for over 65.6 percent of all deaths among whites in Texas in 2006.

Data source: CHS, Texas Department of State Health Services

# Leading Causes of Death

Figure 3. Leading Causes of Death Among African Americans, Texas, 2006

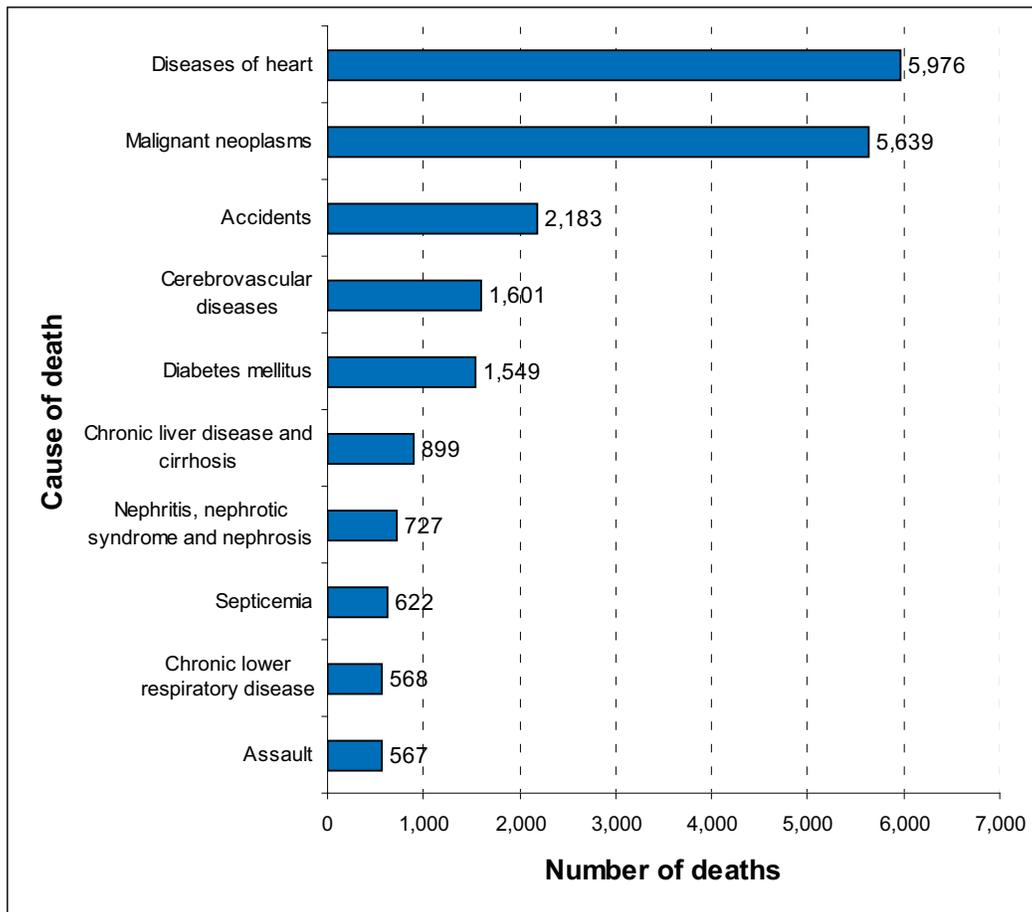


A total of 19,054 African American residents died in 2006. Of those, 14,231 died from the above leading causes. The leading cause of death, diseases of the heart, was responsible for 24.2 percent of all African American deaths while malignant neoplasms, the second most common cause of death, accounted for 21.9 percent. Cerebrovascular diseases ranked third and accounted for 6.6 percent of all deaths among African Americans. Accidents and diabetes were the fourth and fifth leading causes of death accounting for 5 percent each of all deaths among African Americans. Together, the five leading causes of death accounted for 62.3 percent of deaths among African Americans in Texas in 2006.

Data source: CHS, Texas Department of State Health Services

# Leading Causes of Death

**Figure 4. Leading Causes of Death Among Hispanics, Texas, 2006**

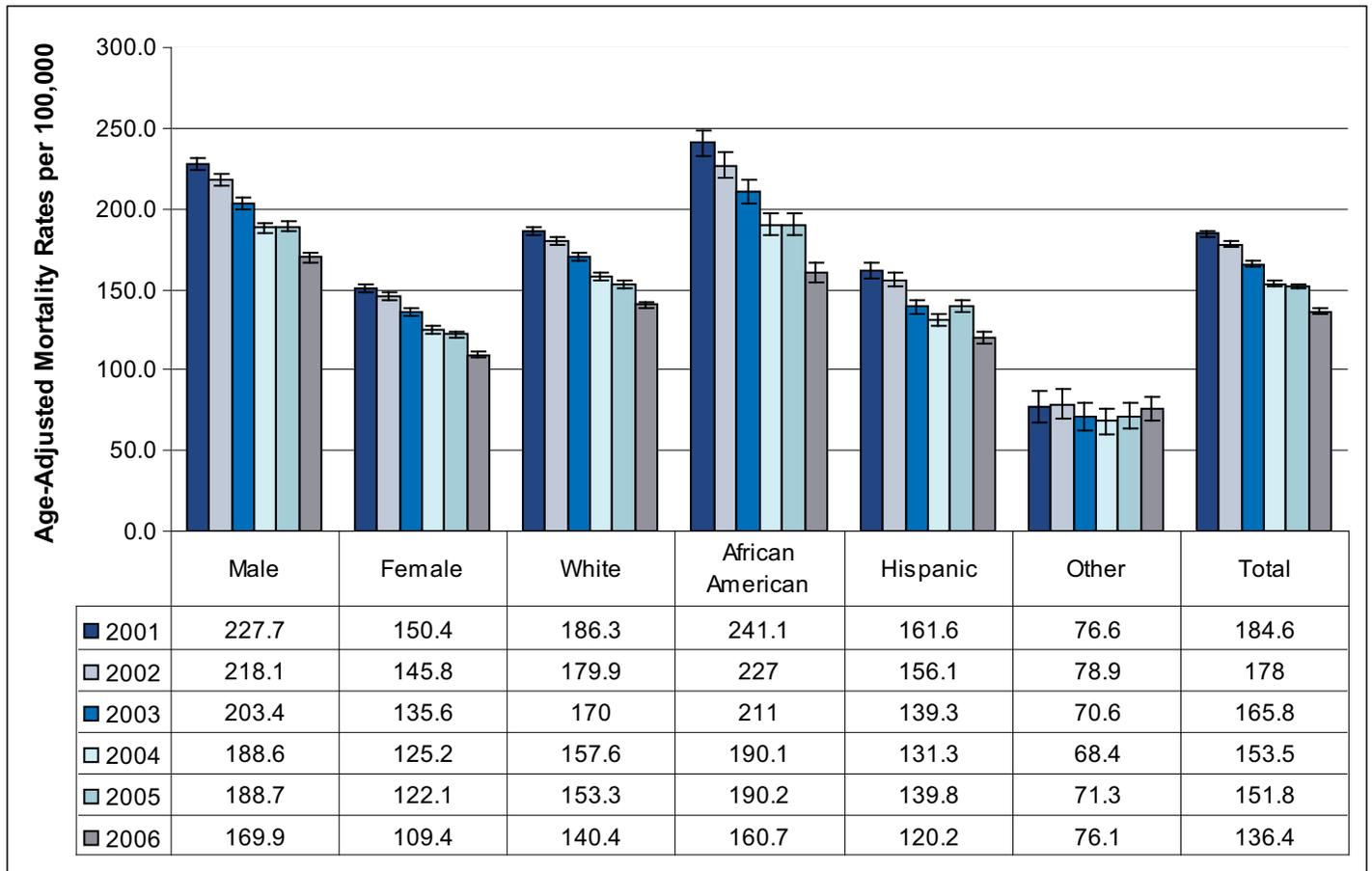


There were a total of 28,077 deaths among Hispanics in Texas in 2006. Of those, 20,331 died from the above leading causes. The leading cause of death, diseases of the heart, was responsible for 21.3 percent of all Hispanic deaths while malignant neoplasms, the second most common cause of death, accounted for 20.1 percent. The third leading cause of death for Hispanics was accidents, which accounted for 8 percent of all deaths. Cerebrovascular diseases were the fourth leading cause of death (5.7 percent of all deaths) and diabetes (5.5 percent of all deaths) was the fifth leading cause of death. Together, these five leading causes of death represented 60.4 percent of all deaths among Hispanics in Texas in 2006.

*Data source: CHS, Texas Department of State Health Services*

# Cardiovascular Disease and Stroke

**Figure 5. Age-Adjusted Mortality Rates per 100,000, Ischemic Heart Disease, Texas, 2001-2006**

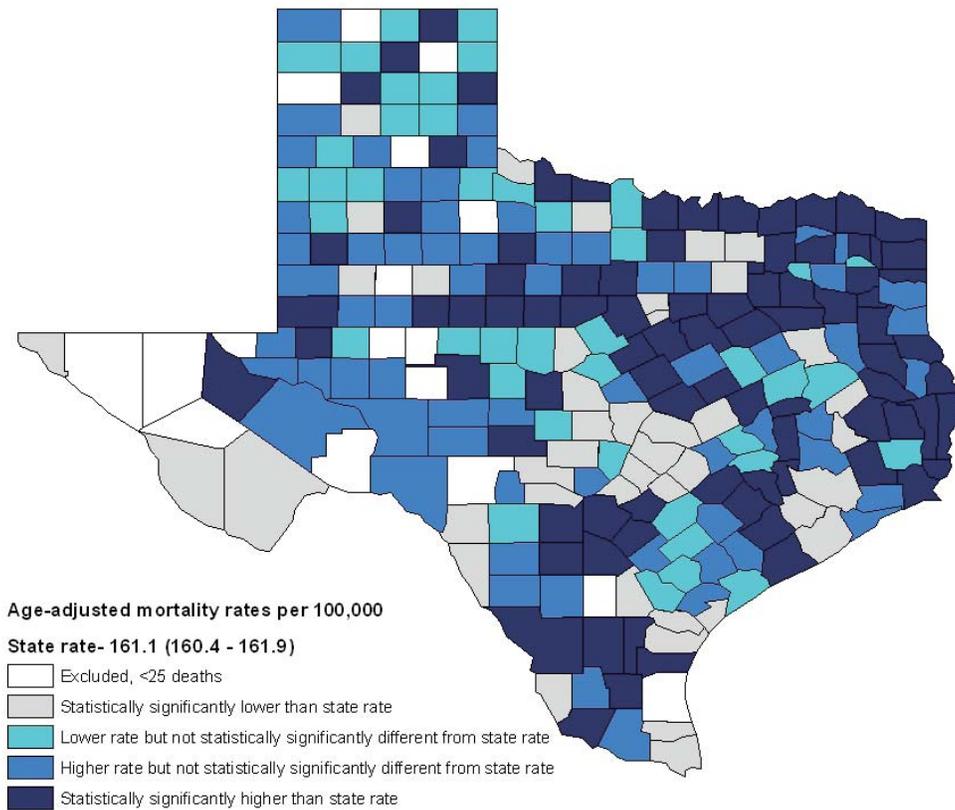


- The overall age-adjusted mortality rate (AAMR) for ischemic heart disease (IHD) declined from 184.6 per 100,000 in 2001 to 136.4 per 100,000 in 2006. The decrease was statistically significant. AAMR for males and females and for whites and African Americans also showed significant decline during the same period. AAMR for Hispanics, however, stayed relatively level from 2001 to 2002, and then showed a significant decline from 2005 to 2006.
- While mortality rates due to IHD are declining, patterns of disease still show that Texas males have a significantly higher risk of dying from IHD than females.
- African Americans had a higher risk of dying from IHD than whites, Hispanics, and Other racial/ethnic groups.

Data source: CHS, Texas Department of State Health Services

# Cardiovascular Disease and Stroke

**Figure 6. Age-Adjusted Mortality Rates per 100,000 by County, Ischemic Heart Disease, Texas, 2001-2006**

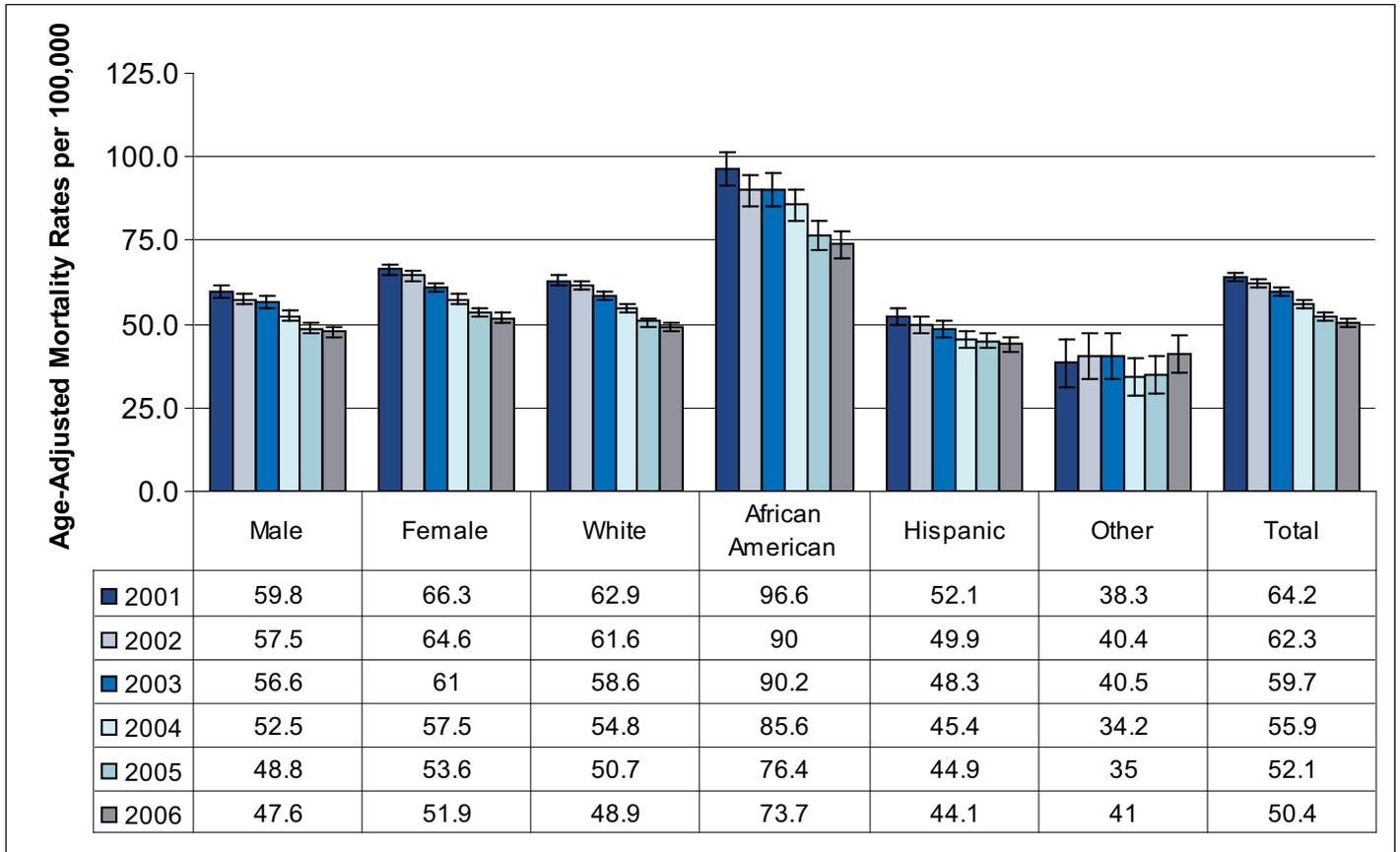


- The map above shows AAMRs for IHD by Texas county. The different shades represent levels of statistical significance, as indicated in the map legend. White counties are those excluded due to small sample size (<25 deaths).
- East Texas had a high proportion of counties where IHD mortality rates were statistically significantly higher than the state rate. Central Texas had a high proportion of counties where IHD mortality rates were statistically significantly lower than the state rate.

Data source: CHS, Texas Department of State Health Services

# Cardiovascular Disease and Stroke

**Figure 7. Age-Adjusted Mortality Rates per 100,000, Stroke, Texas, 2001-2006**

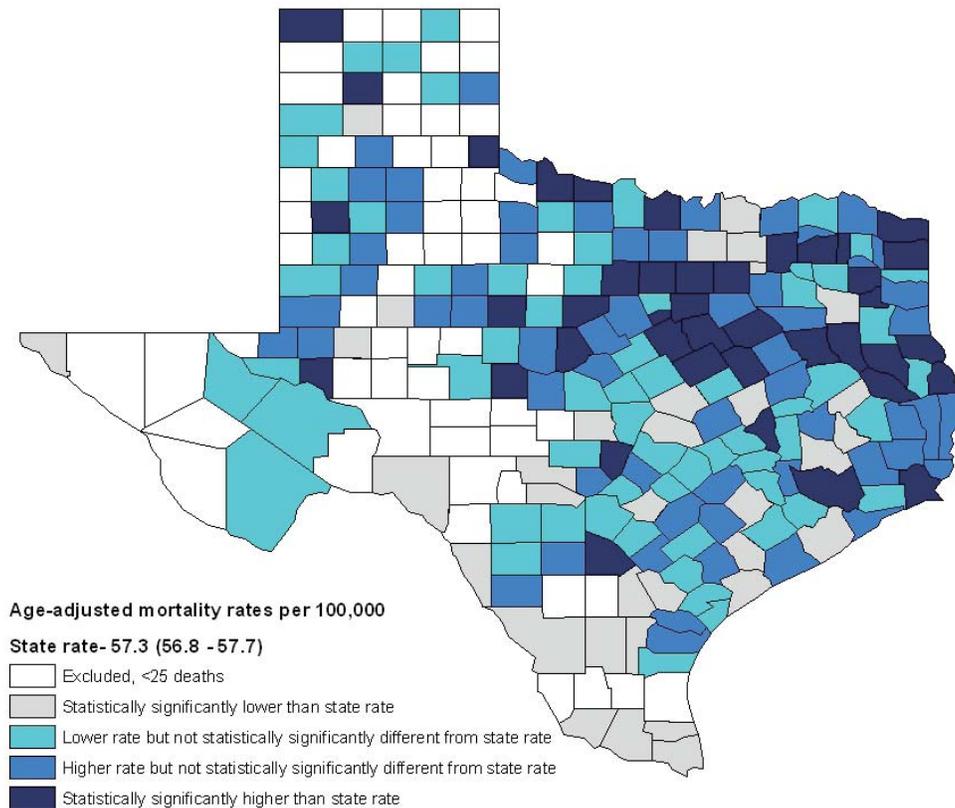


- The overall AAMR for stroke declined from 64.2 per 100,000 in 2001 to 50.4 per 100,000 in 2006. The decrease was statistically significant. Among the racial/ethnic groups, AAMR for whites showed a significant decrease from a high of 62.9 per 100,000 in 2001 to 48.9 per 100,000 in 2006.
- Texas females had a significantly higher risk of dying from stroke than males.
- African Americans had significantly higher mortality rates compared to whites, Hispanics, and Other racial/ethnic groups.

Data source: CHS, Texas Department of State Health Services

## Cardiovascular Disease and Stroke

**Figure 8. Age-Adjusted Mortality Rates per 100,000 by County, Stroke, Texas, 2001-2006**

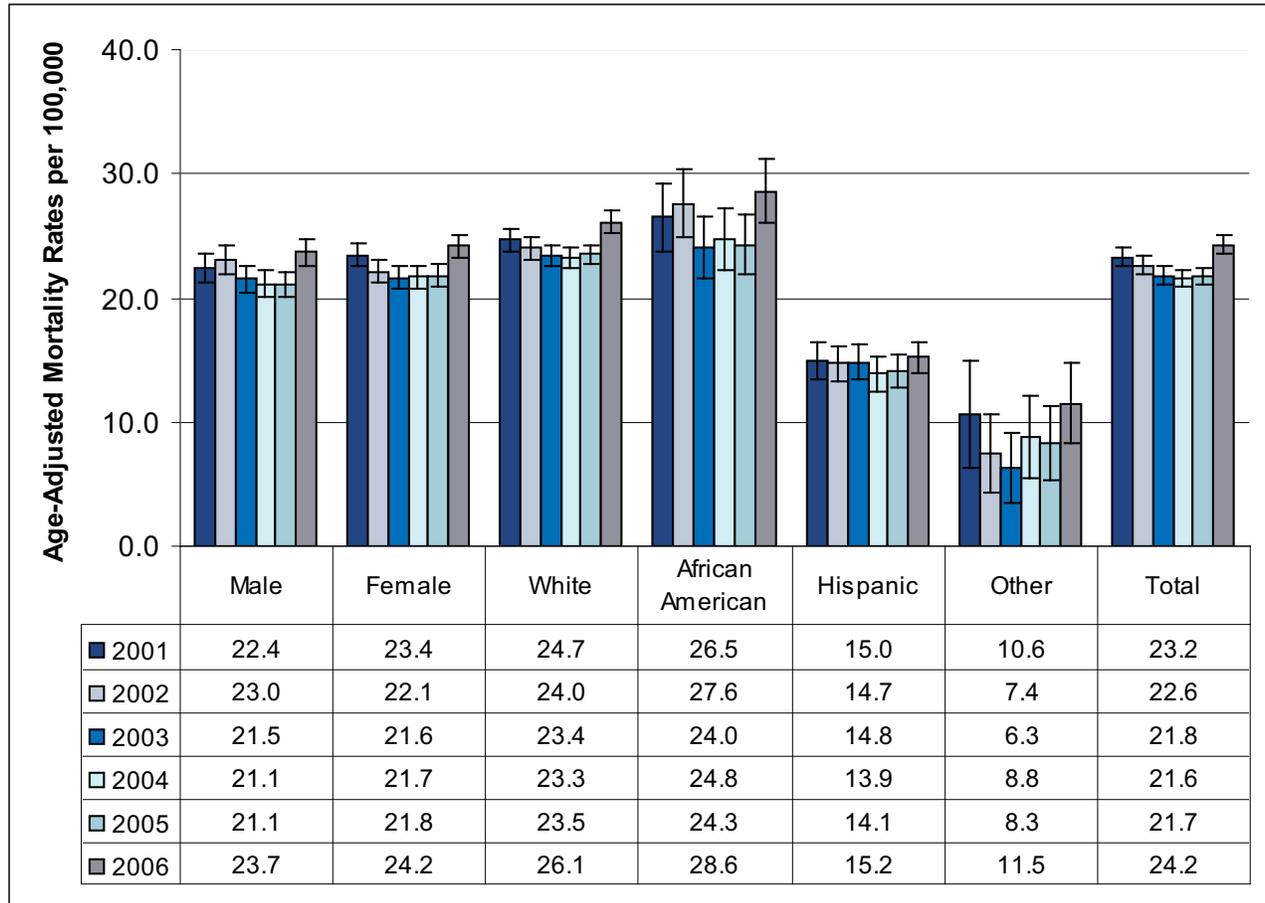


The map above shows AAMRs for stroke by Texas county. North central Texas had a high proportion of counties where stroke mortality rates were statistically significantly higher than the state rate. South Texas had a high proportion of counties where IHD mortality rates were either statistically significantly lower than the state rate, or lower than the state rate but not significantly.

Data source: CHS, Texas Department of State Health Services

# Cardiovascular Disease and Stroke

**Figure 9. Age-Adjusted Mortality Rates per 100,000, Congestive Heart Failure, Texas, 2001-2006**

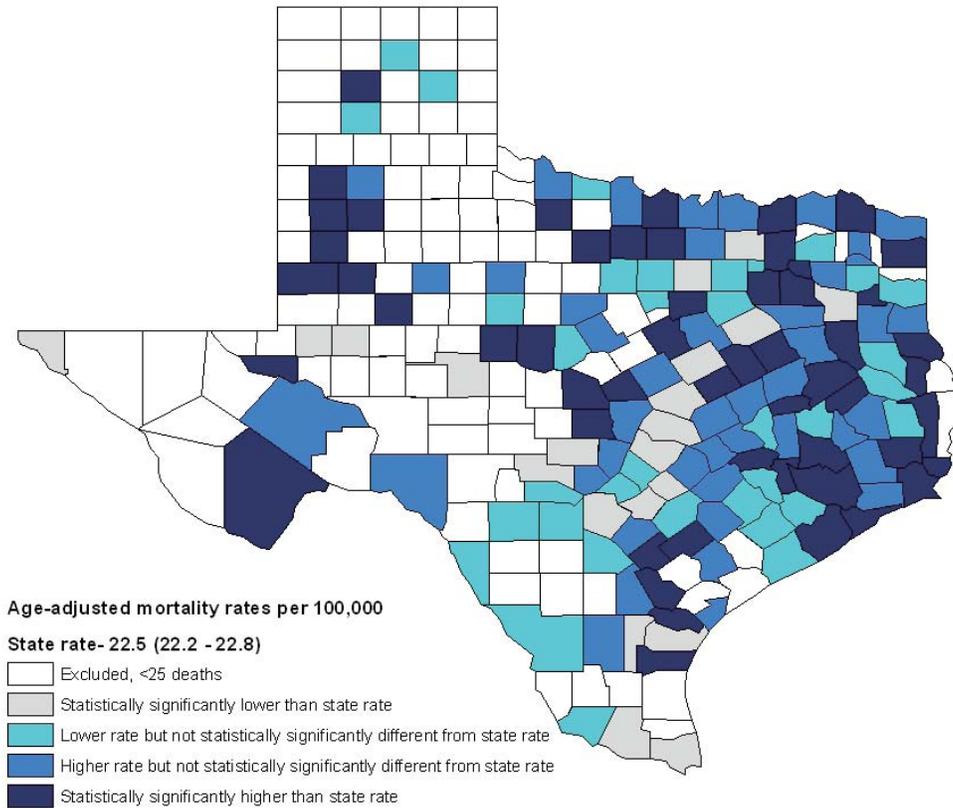


- The overall AAMR for congestive heart failure (CHF) declined from 23.2 per 100,000 in 2001 to 21.7 per 100,000 in 2005, but increased to 24.2 per 100,000 in 2006. The decrease between 2001 and 2005 was not statistically significant, but the increase between 2005 and 2006 was statistically significant.
- There was no statistically significant difference between males and females.
- Whites and African Americans had significantly higher mortality rates compared to Hispanics and Other races.

Data source: CHS, Texas Department of State Health Services

# Cardiovascular Disease and Stroke

**Figure 10. Age-Adjusted Mortality Rates per 100,000 by County, Congestive Heart Failure, Texas, 2001-2006**

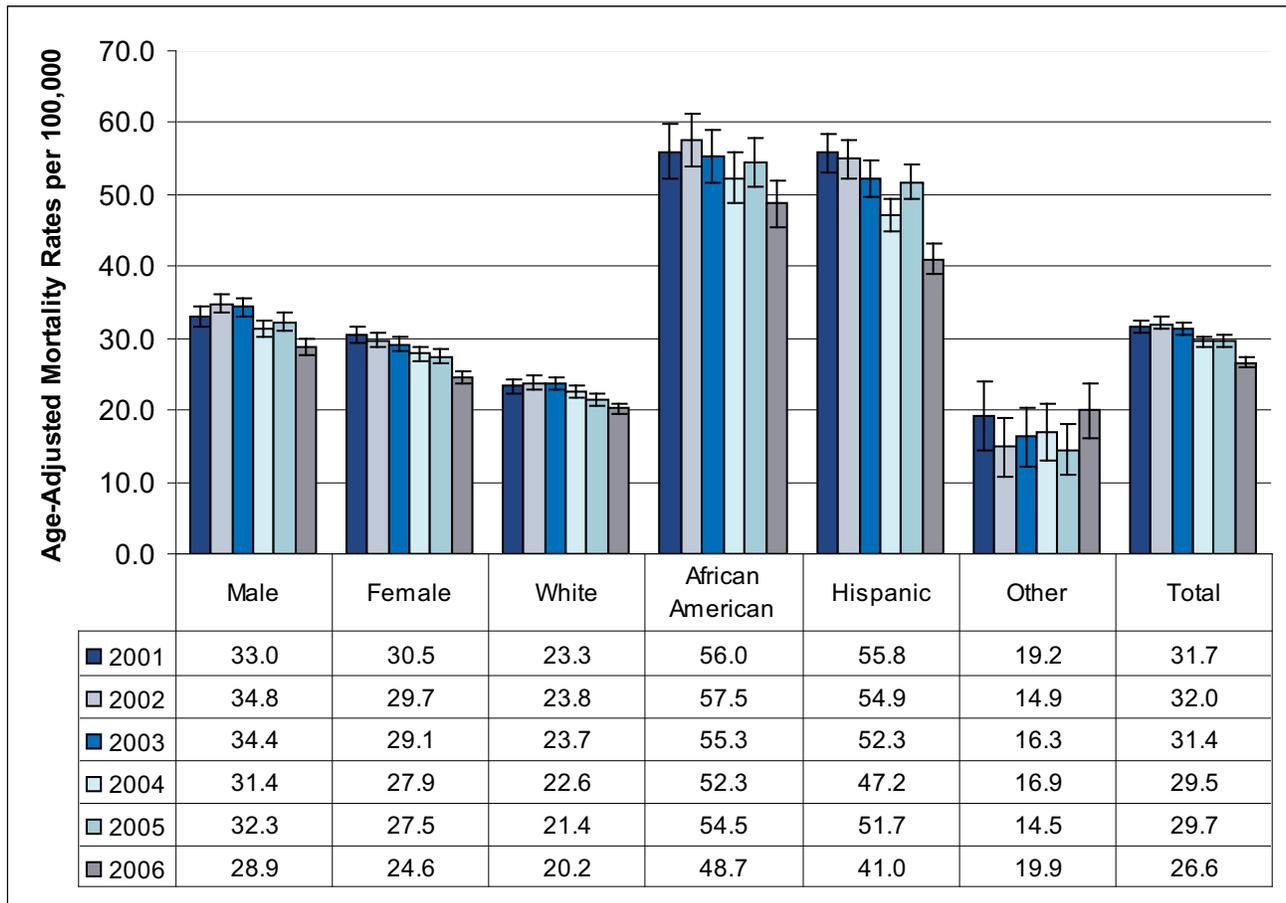


The map above shows AAMRs for CHF by Texas county. East Texas had a high proportion of counties where CHF mortality rates were either statistically significantly higher than the state rate, or higher than the state rate but not significantly.

Data source: CHS, Texas Department of State Health Services

# Diabetes

**Figure 11. Age-Adjusted Mortality Rates per 100,000, Diabetes, Texas, 2001-2006**

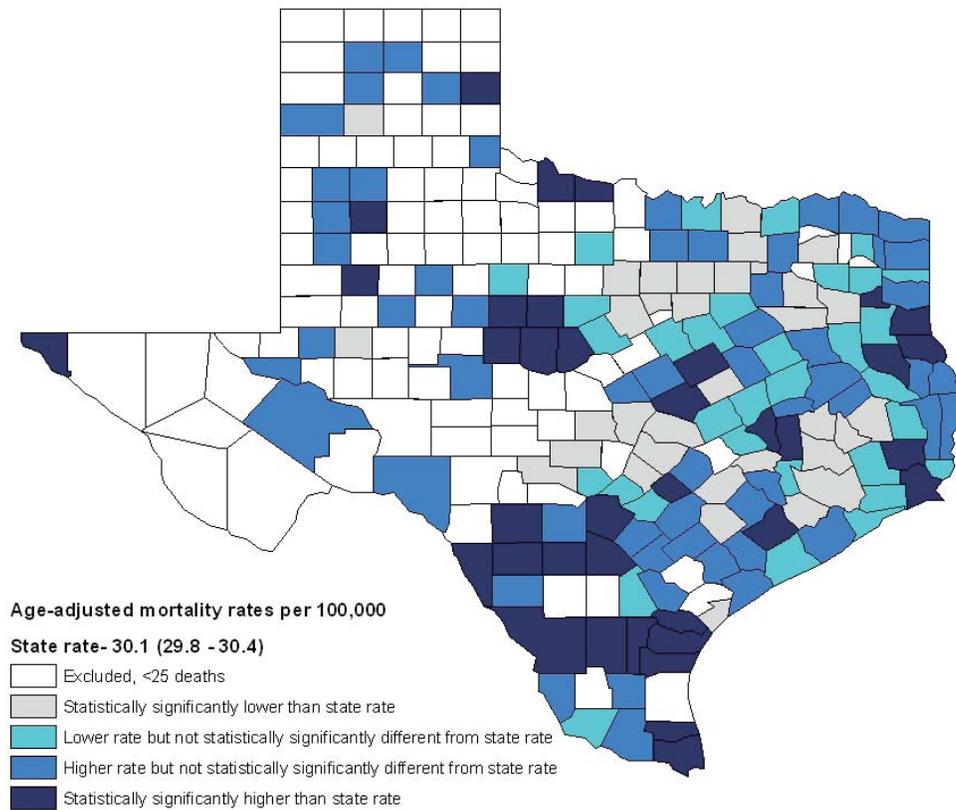


- The overall AAMR for diabetes mellitus decreased significantly from 31.7 per 100,000 in 2001 to 26.6 per 100,000 in 2006.
- Texas males had a significantly higher risk of dying from diabetes than females.
- African Americans and Hispanics had significantly higher mortality rates due to diabetes compared to whites and Other racial/ethnic groups.

Data source: CHS, Texas Department of State Health Services

# Diabetes

**Figure 12. Age-Adjusted Mortality Rates per 100,000 by County, Diabetes, Texas, 2001-2006**

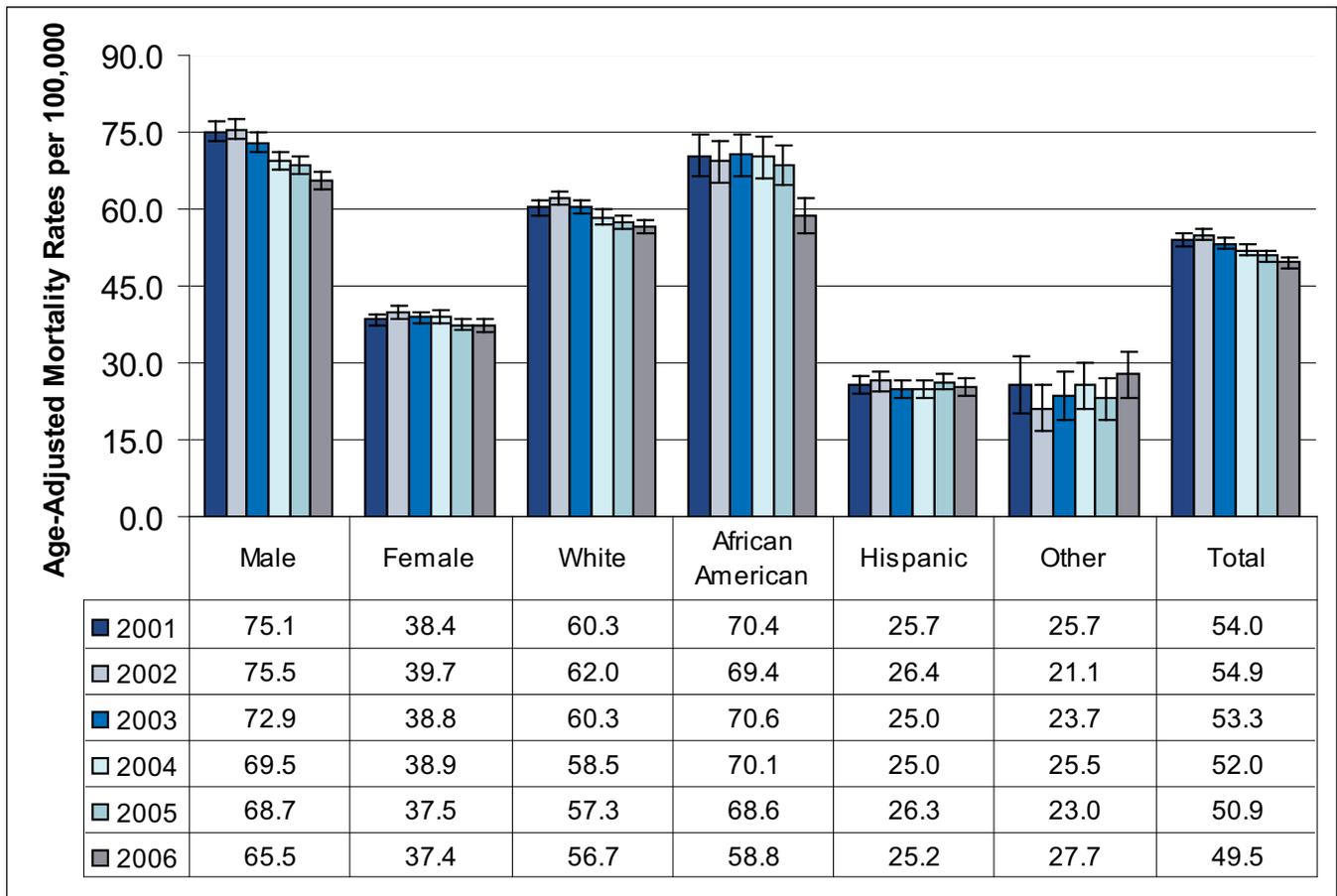


The map above shows AAMRs for diabetes by Texas county. South Texas had a high proportion of counties where diabetes mortality rates were statistically significantly higher than the state rate.

Data source: CHS, Texas Department of State Health Services

# Lung Cancer

**Figure 13. Age-Adjusted Mortality Rates per 100,000, Lung Cancer, Texas, 2001-2006**

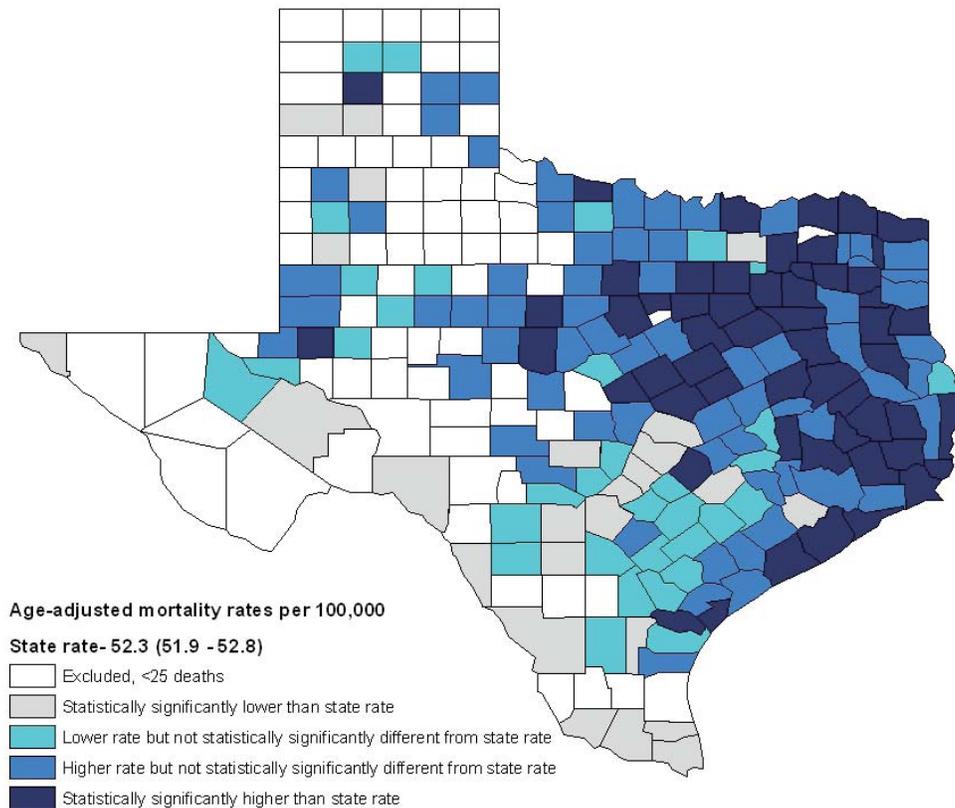


- The overall AAMR for lung cancer decreased slightly from 54.0 per 100,000 in 2001 to 49.5 per 100,000 in 2006, however the change was not statistically significant. Decreases in mortality rates can also be noted among males and African Americans during the same period. The decrease in rates was statistically significant among African Americans and males.
- Despite decreasing mortality rates overall, Texas males had approximately twice the rate of lung cancer deaths compared to females.
- African Americans had the highest mortality rates while Hispanics and Other racial/ethnic groups had the lowest mortality rates.

Data source: CHS, Texas Department of State Health Services

# Lung Cancer

**Figure 14. Age-Adjusted Mortality Rates per 100,000 by County, Lung Cancer, Texas, 2001-2006**

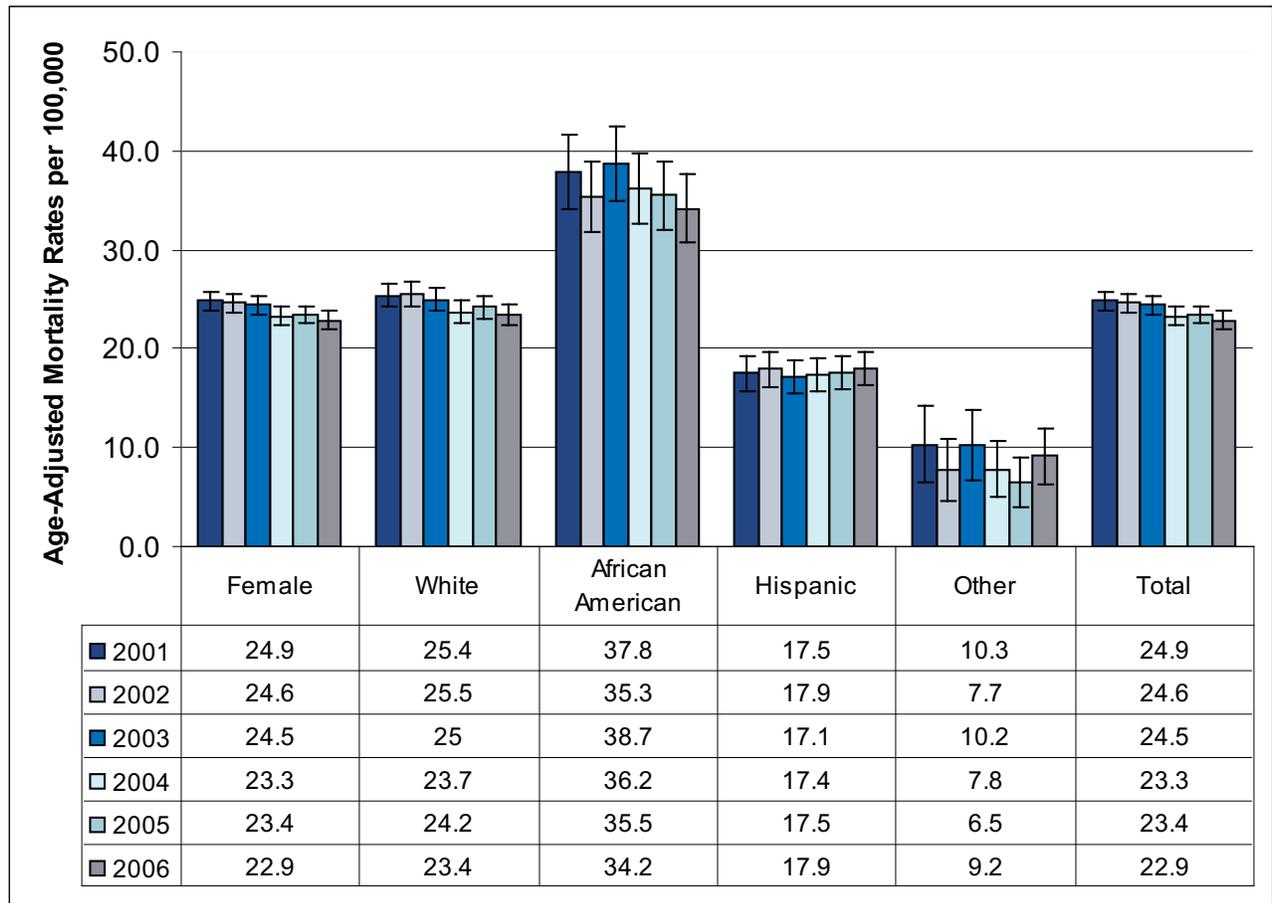


The map above shows AAMRs for lung cancer by Texas county. East Texas had a high proportion of counties where lung cancer mortality rates were statistically significantly higher than the state rate.

Data source: CHS, Texas Department of State Health Services

## Female Breast Cancer

**Figure 15. Age-Adjusted Mortality Rates per 100,000, Female Breast Cancer, Texas, 2001-2006**

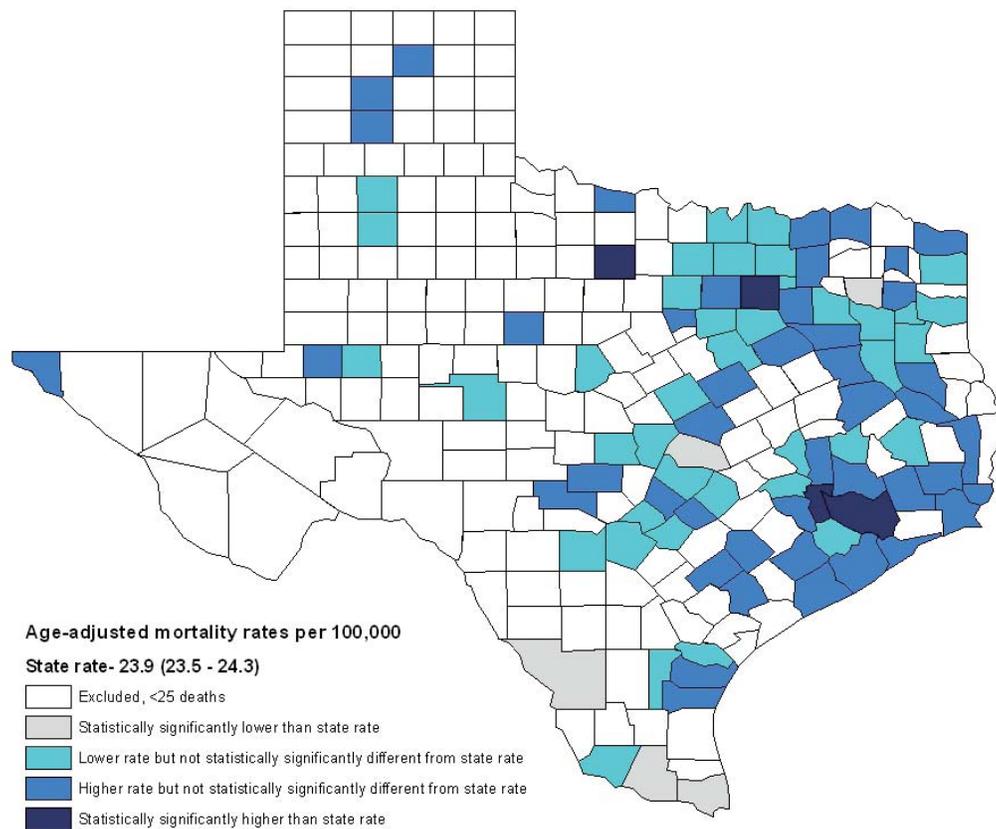


- The overall AAMR for breast cancer showed a slight decrease from 24.9 per 100,000 in 2001 to 22.9 per 100,000 in 2006. The decrease, however, was not statistically significant.
- African Americans had significantly higher mortality rates compared to whites, Hispanics, and Other racial/ethnic groups.

Data source: CHS, Texas Department of State Health Services

## Female Breast Cancer

**Figure 16. Age-Adjusted Mortality Rates per 100,000 by County, Female Breast Cancer, Texas, 2001-2006**

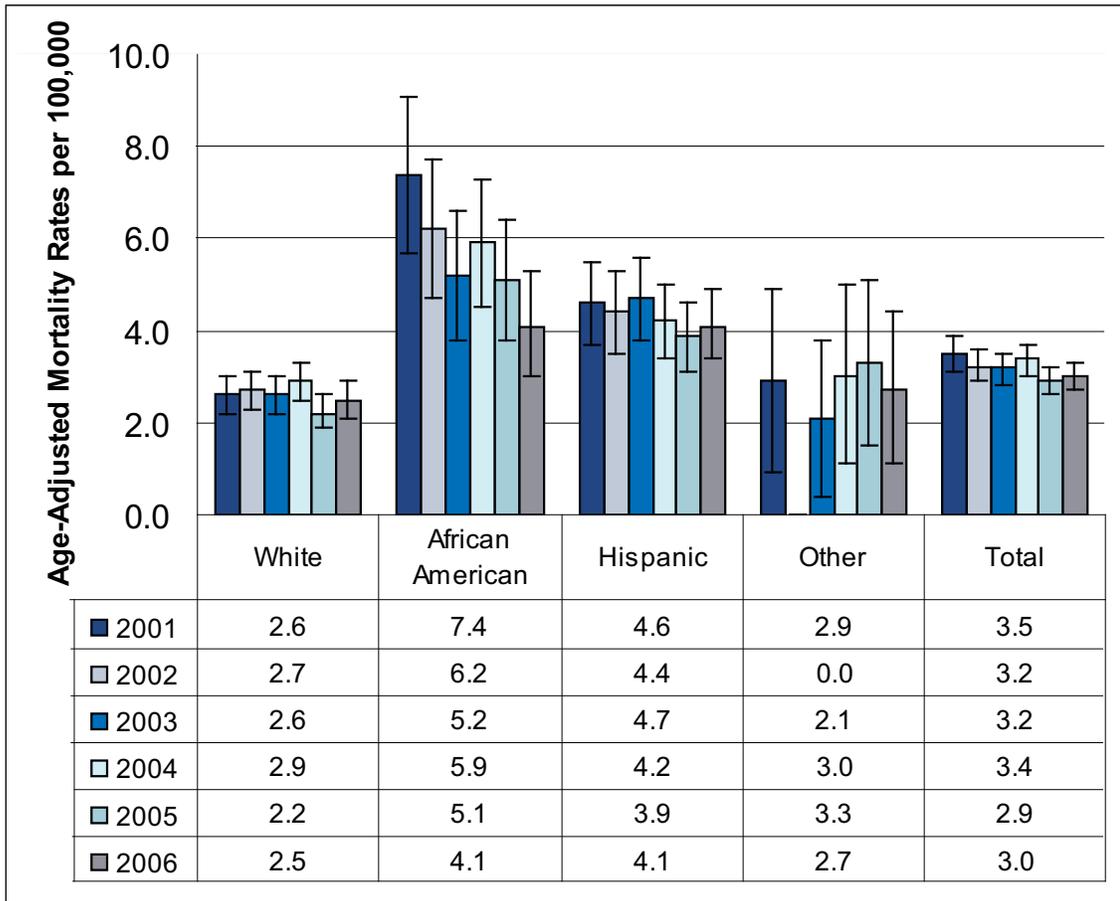


The map above shows AAMRs for breast cancer by Texas county. The majority of counties had breast cancer mortality rates (higher or lower) that did not statistically significantly differ from the state rate.

*Data source: CHS, Texas Department of State Health Services*

# Cervical Cancer

Figure 17. Age-Adjusted Mortality Rates per 100,000, Cervical Cancer, Texas, 2001-2006

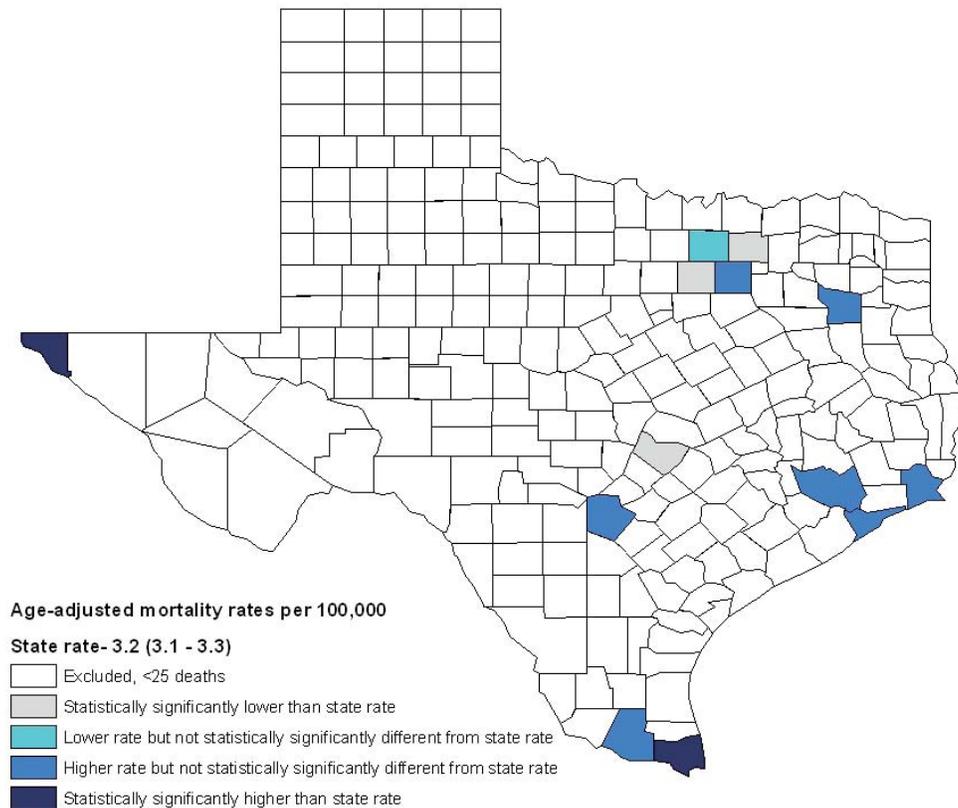


- The overall AAMR for cervical cancer remained relatively stable from 2001 to 2006.
- African Americans and Hispanics had significantly higher mortality rates compared to whites.

Data source: CHS, Texas Department of State Health Services

# Cervical Cancer

**Figure 18. Age-Adjusted Mortality Rates per 100,000 by County, Cervical Cancer, Texas, 2001-2006**

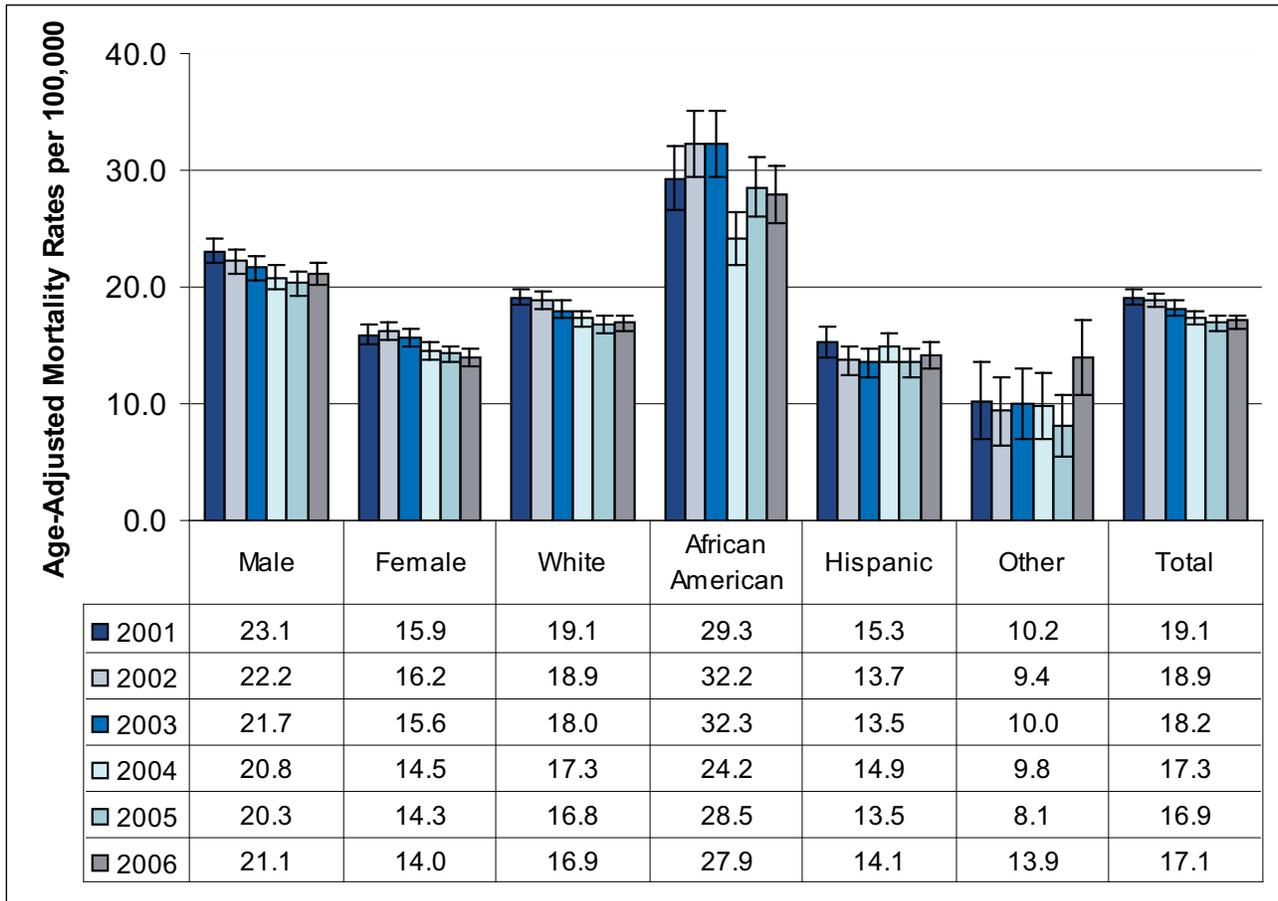


The map above shows AAMRs for cervical cancer by Texas county. Two counties, El Paso and Cameron, had rates that were statistically significantly higher than the state rate.

Data source: CHS, Texas Department of State Health Services

# Colorectal Cancer

**Figure 19. Age-Adjusted Mortality Rates per 100,000, Colorectal Cancer, Texas, 2001-2006**

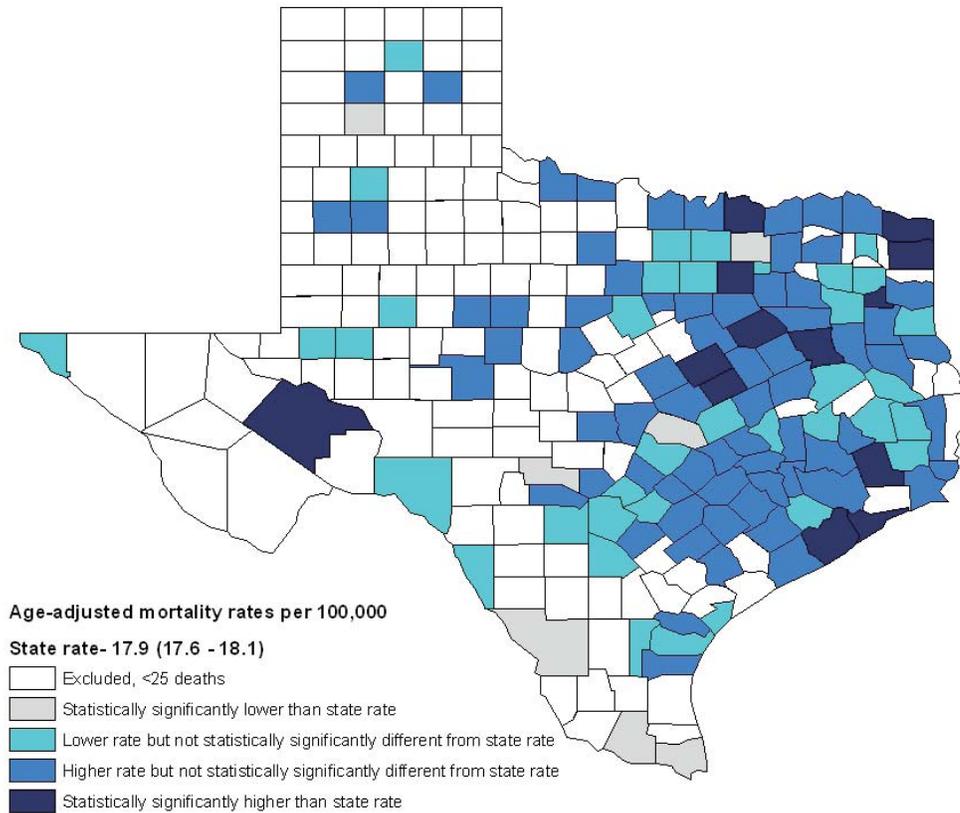


- The overall AAMR for colorectal cancer decreased from 19.1 per 100,000 in 2001 to 17.1 per 100,000 in 2006. The decrease, however, was not statistically significant.
- Texas males had a significantly higher risk of dying from colorectal cancer than females.
- African Americans had significantly higher mortality rates compared to whites, Hispanics, and Other races.

Data source: CHS, Texas Department of State Health Services

# Colorectal Cancer

**Figure 20. Age-Adjusted Mortality Rates per 100,000 by County, Colorectal Cancer, Texas, 2001-2006**

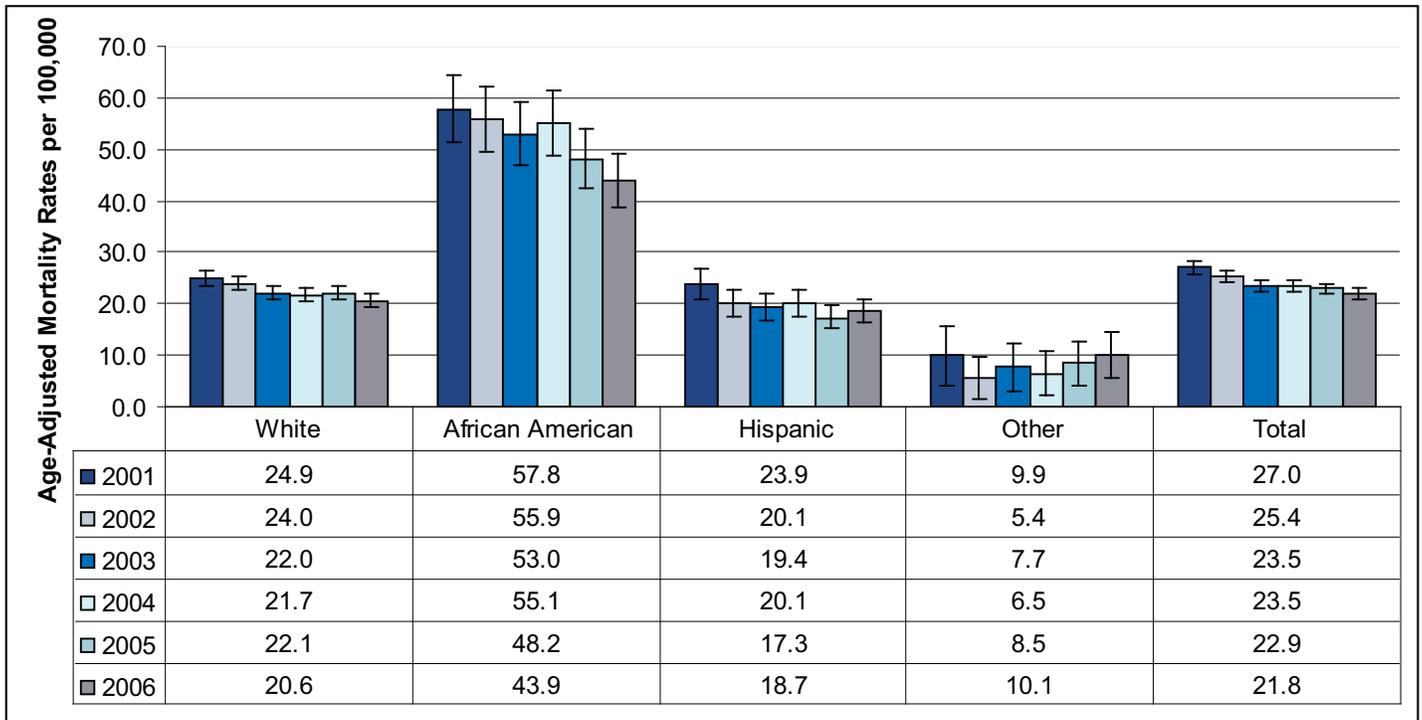


The map above shows AAMRs for colorectal cancer by Texas county. The majority of counties had colorectal cancer mortality rates (higher or lower) that did not statistically significantly differ from the state rate. Areas of south Texas had rates that were statistically significantly lower than the state rate.

Data source: CHS, Texas Department of State Health Services

# Prostate Cancer

**Figure 21. Age-Adjusted Mortality Rates per 100,000, Prostate Cancer, Texas, 2001-2006**

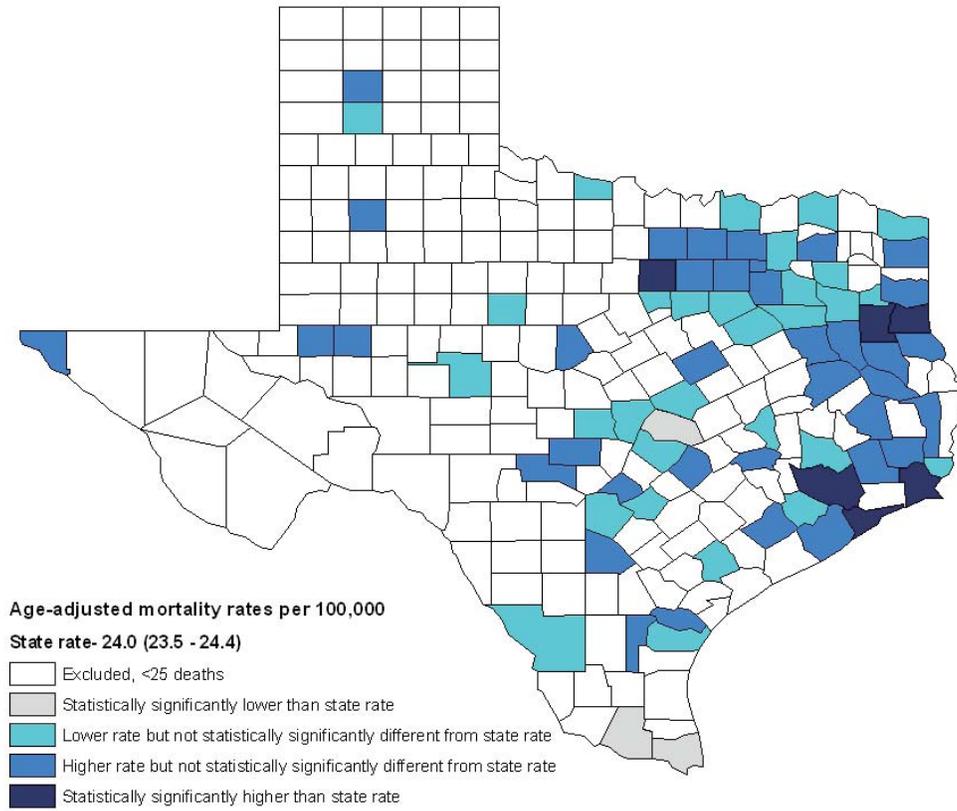


- The overall AAMR for prostate cancer decreased significantly from 27.0 per 100,000 in 2001 to 21.8 per 100,000 in 2006.
- African Americans had significantly higher mortality rates compared to whites, Hispanics, and Other races.

Data source: CHS, Texas Department of State Health Services

# Prostate Cancer

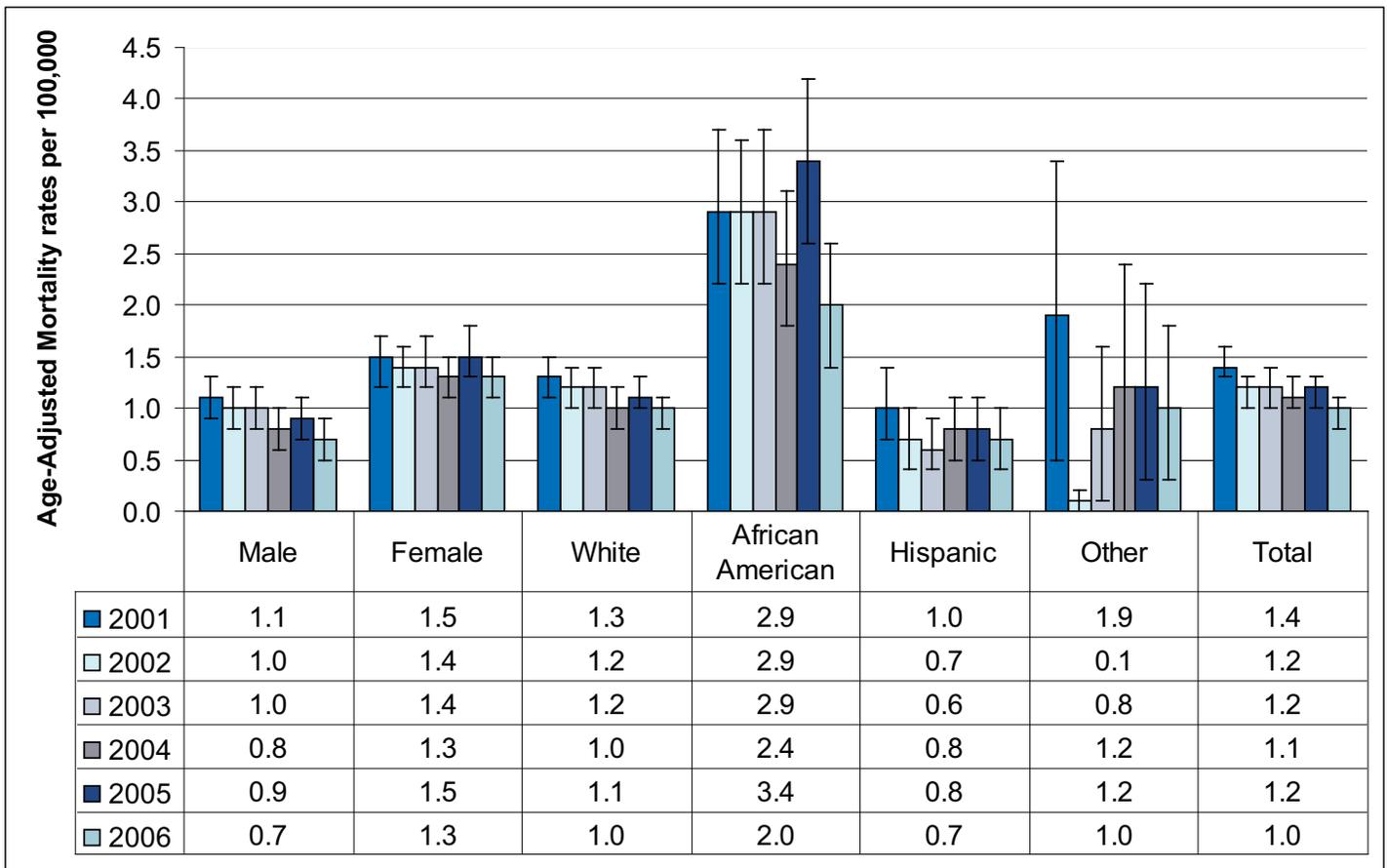
**Figure 22. Age-Adjusted Mortality Rates per 100,000 by County, Prostate Cancer, Texas, 2001-2006**



The map above shows AAMRs for prostate cancer by Texas county. The majority of counties had prostate cancer mortality rates (higher or lower) that did not statistically significantly differ from the state rate.

Data source: CHS, Texas Department of State Health Services

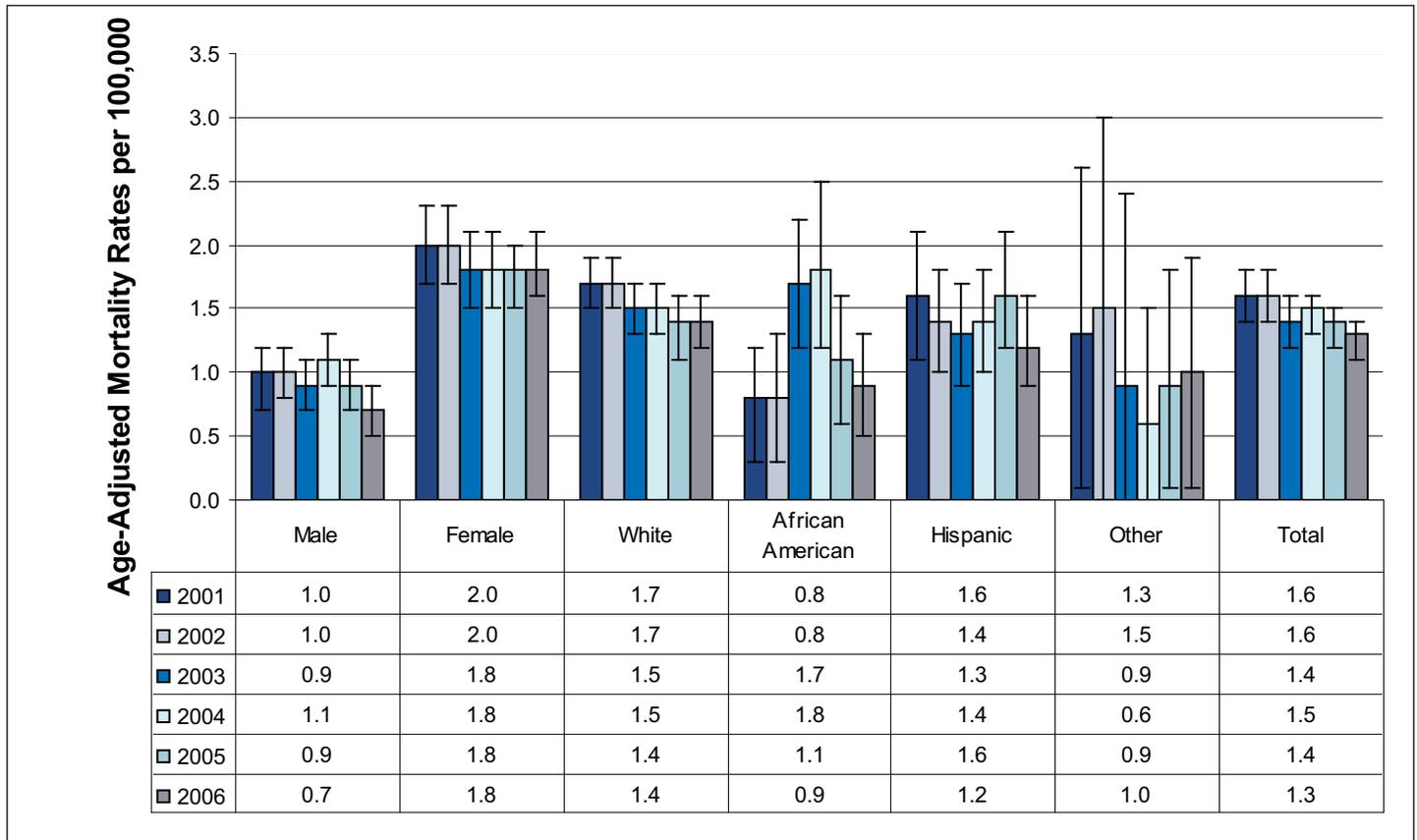
**Figure 23. Age-Adjusted Mortality Rates per 100,000, Asthma, Texas, 2001-2006**



- The overall AAMR for asthma stayed relatively stable from 2001 through 2006.
- Texas females had higher mortality rates from asthma than males, although these differences were not always statistically significant.
- Among the race/ethnicity groups, African Americans had significantly higher mortality rates compared to whites and Hispanics.

Data source: CHS, Texas Department of State Health Services

**Figure 24. Age-Adjusted Mortality Rates per 100,000, Arthritis, Texas, 2001-2006**



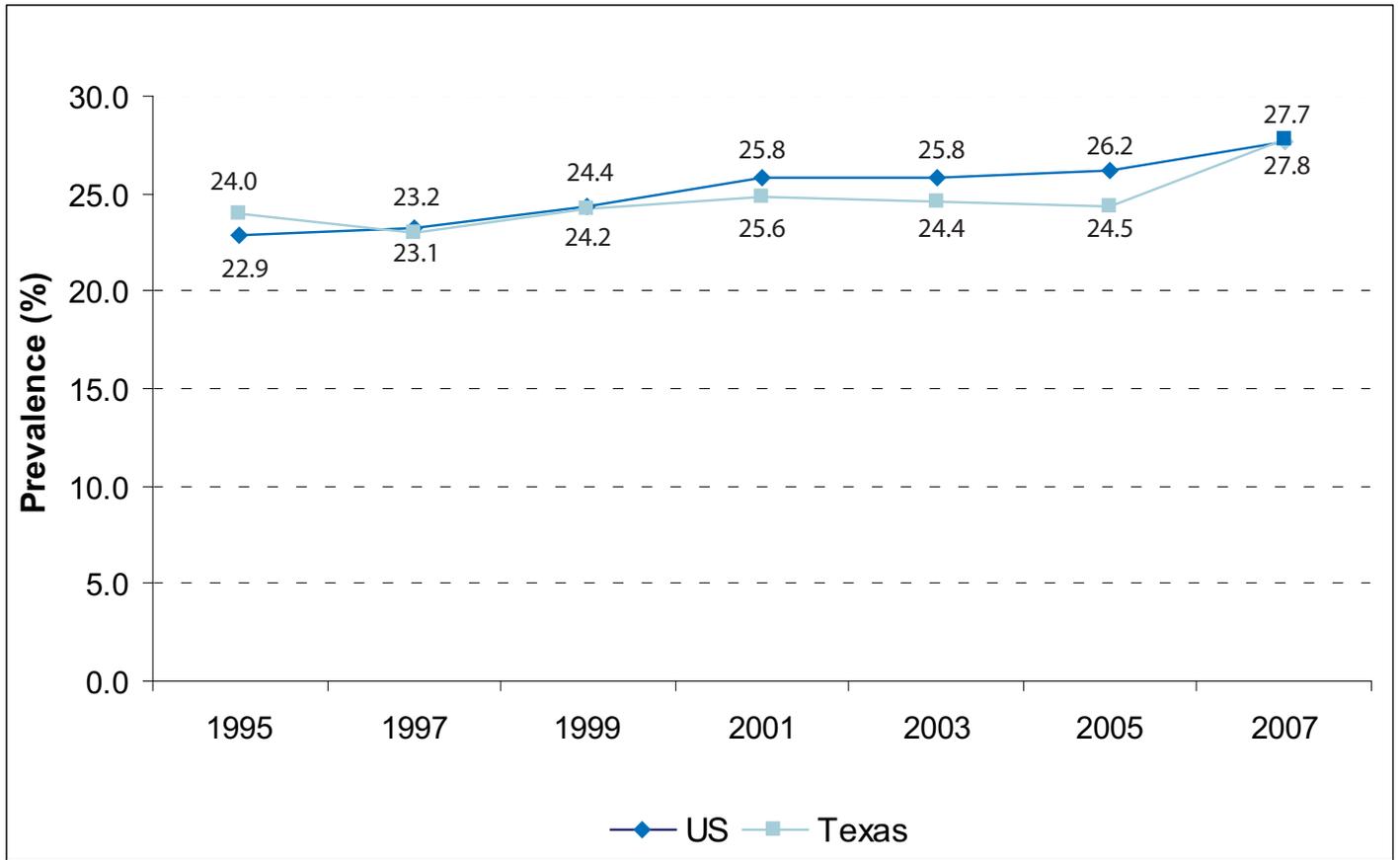
- The overall AAMR for arthritis stayed relatively stable from 2001 through 2006.
- Texas females had a significantly higher risk of dying from arthritis than males.
- No consistent patterns were apparent by race/ethnicity from 2001-2006.

Data source: CHS, Texas Department of State Health Services

# Prevalence

# High Blood Pressure

Figure 25. Prevalence of High Blood Pressure Among Adults, Texas & U.S., 1995-2007

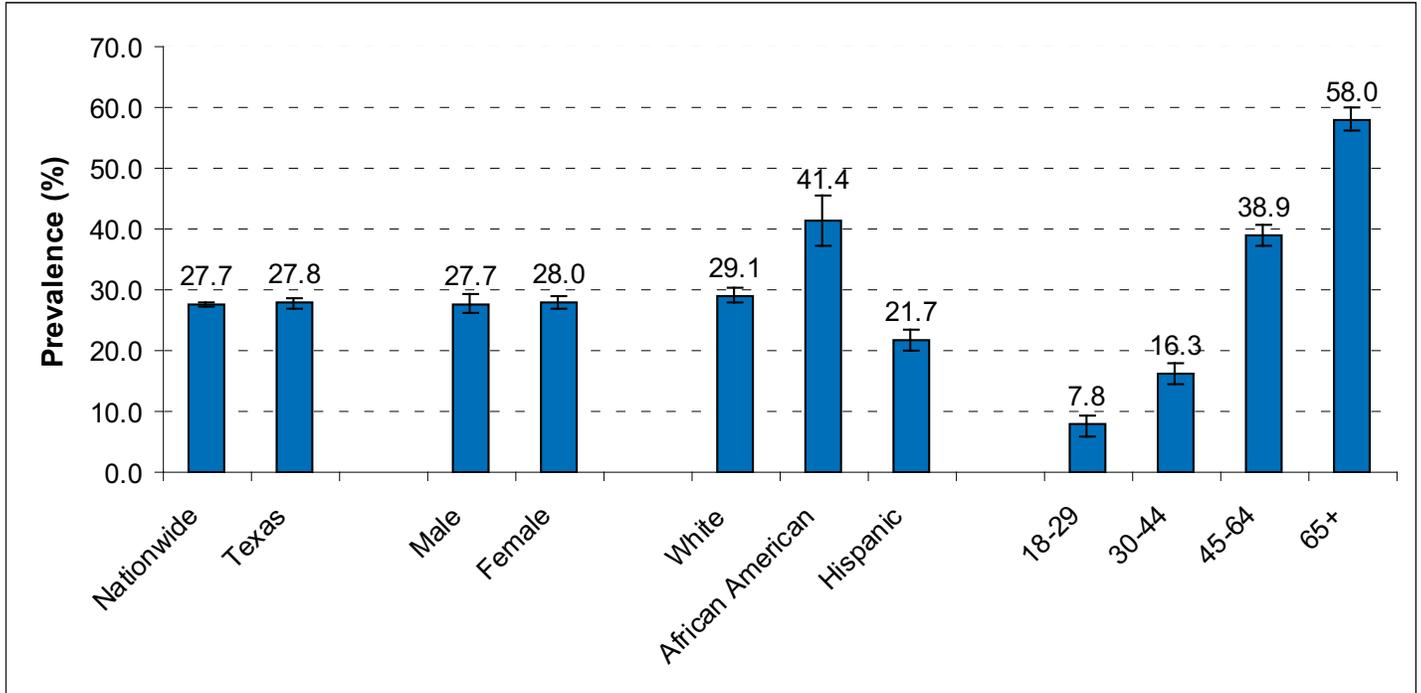


In 2007, 27.8 percent of adult Texans reported having ever been told by a physician that they had high blood pressure. The prevalence of high blood pressure remained unchanged at approximately 24 percent between 1995 and 2005. There were no statistically significant differences between Texas and the U.S. from 1995 to 2007.

Data source: BRFSS, Texas Department of State Health Services

# High Blood Pressure

Figure 26. Prevalence of High Blood Pressure Among Adults, 2007

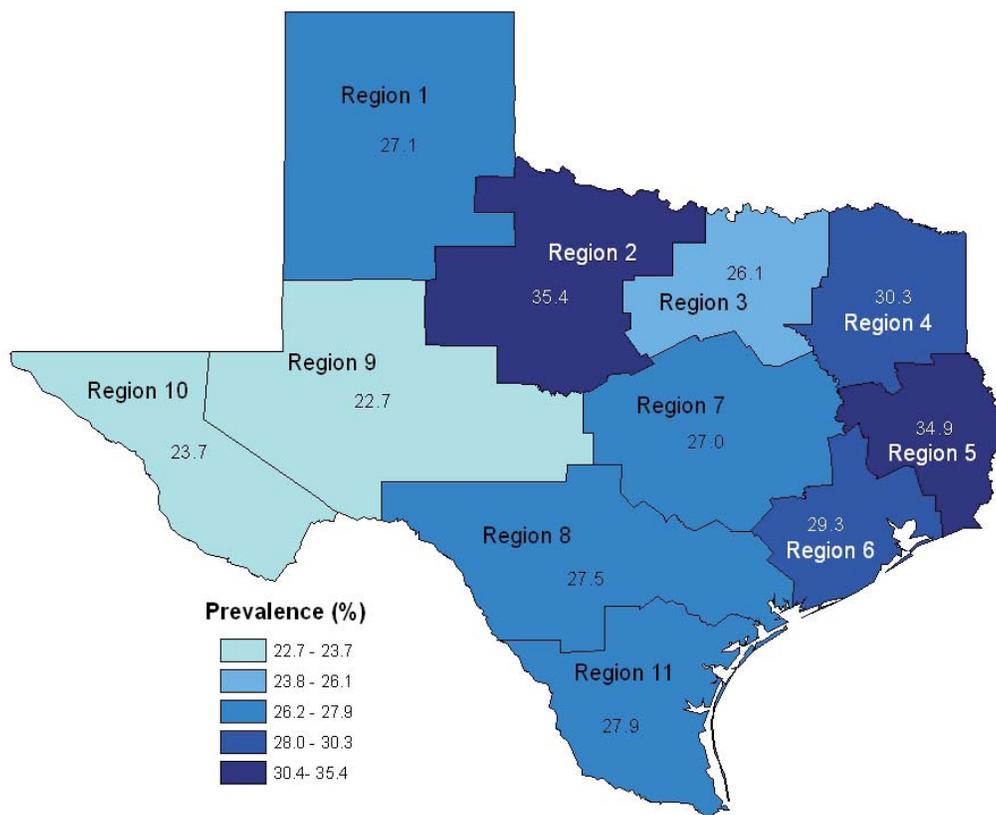


- Texas prevalence rates of high blood pressure were similar to the national average.
- Males and females had similar prevalence rates.
- Whites and African Americans had significantly higher prevalence rates of high blood pressure compared to Hispanics.
- High blood pressure prevalence increased significantly with increasing age.

Data source: BRFSS, Texas Department of State Health Services

## High Blood Pressure

**Figure 27. Prevalence of High Blood Pressure Among Adults by Health Service Region (HSR), 2007**

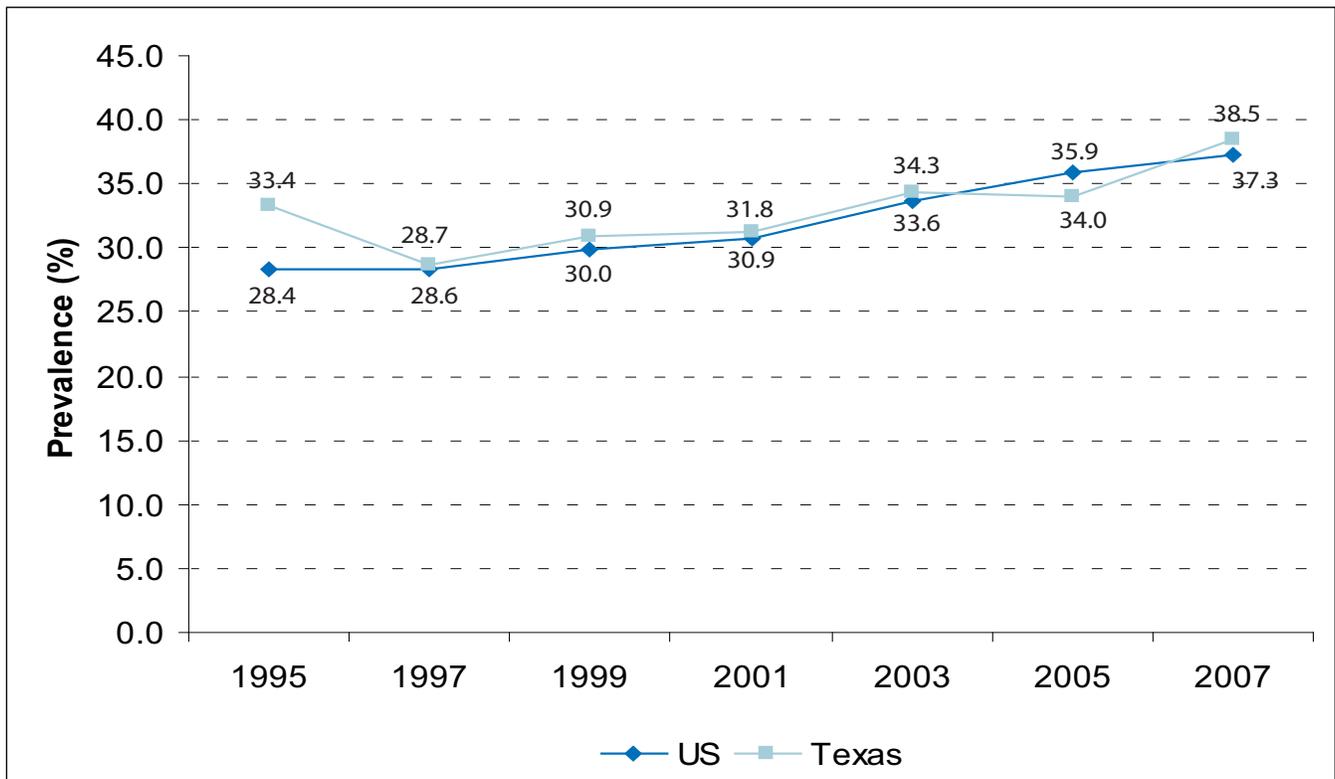


- The map above shows prevalence rates for high blood pressure by HSR.
- In 2007, prevalence of high blood pressure was highest in HSRs 2 and 5.

Data source: BRFSS, Texas Department of State Health Services

# High Blood Cholesterol

Figure 28. Prevalence of High Blood Cholesterol Among Adults, Texas & U.S., 1995-2007

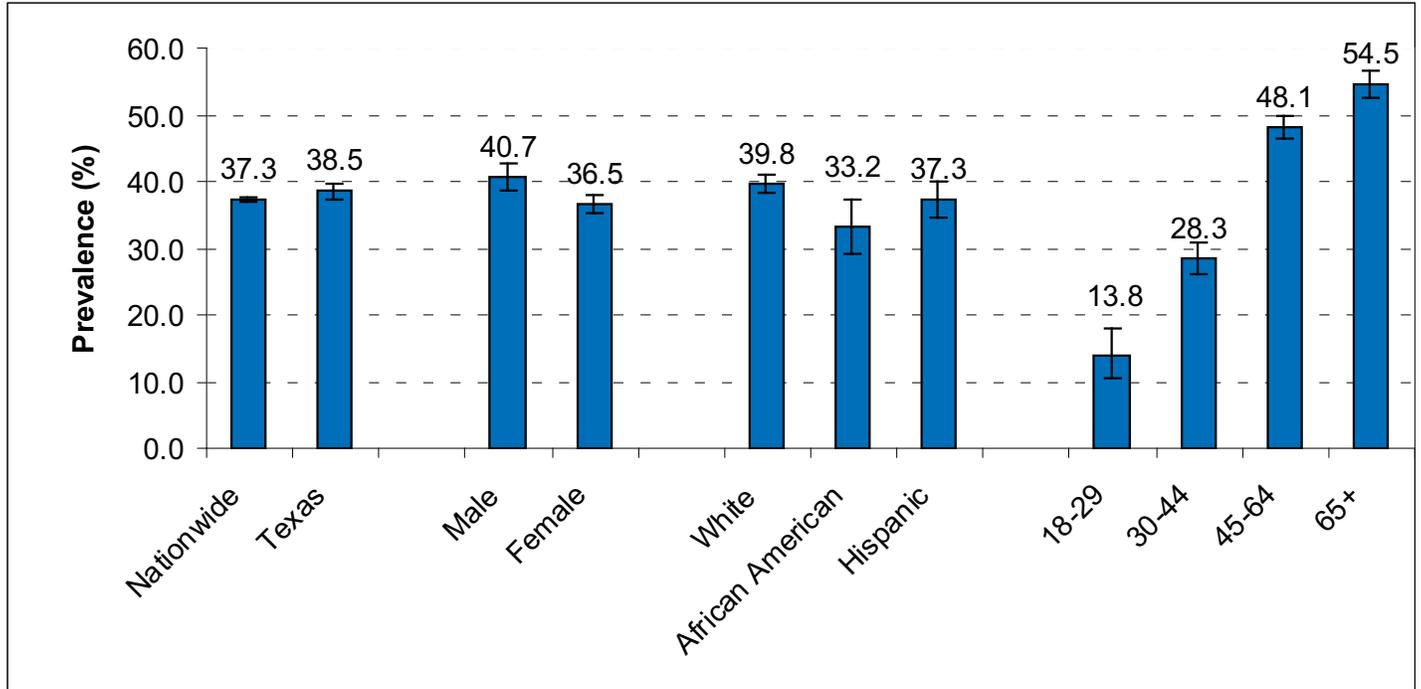


The prevalence of adult Texans reporting having been told by a healthcare professional that they had high blood cholesterol increased between 1995 and 2007.

Data source: BRFSS, Texas Department of State Health Services

# High Blood Cholesterol

Figure 29. Prevalence of High Blood Cholesterol Among Adults, 2007

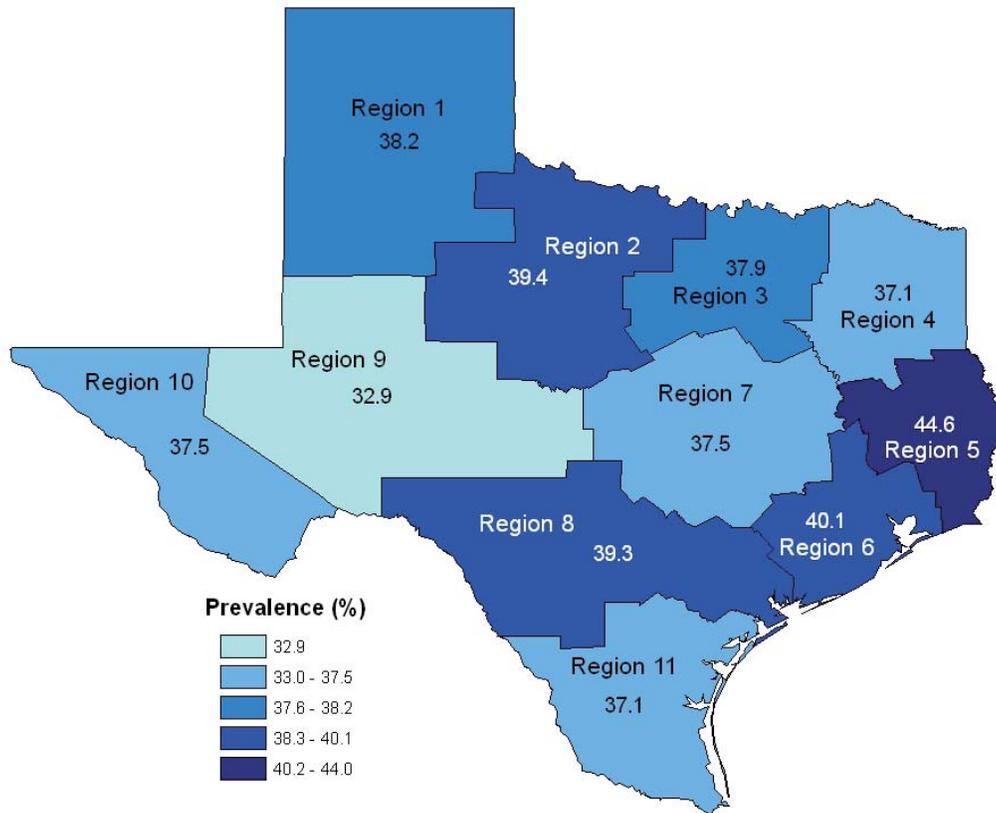


- Texas prevalence rates of high blood cholesterol were similar to the national average.
- Males had a significantly higher prevalence rate of high blood cholesterol compared to females.
- Whites had significantly higher prevalence rates of high blood cholesterol compared to African Americans.
- High blood cholesterol increased significantly with age.

Data source: BRFSS, Texas Department of State Health Services

# High Blood Cholesterol

Figure 30. Prevalence of High Blood Cholesterol Among Adults by HSR, 2007



In 2007, prevalence of high blood cholesterol was highest in HSR 5.

Data source: BRFSS, Texas Department of State Health Services

# Diabetes

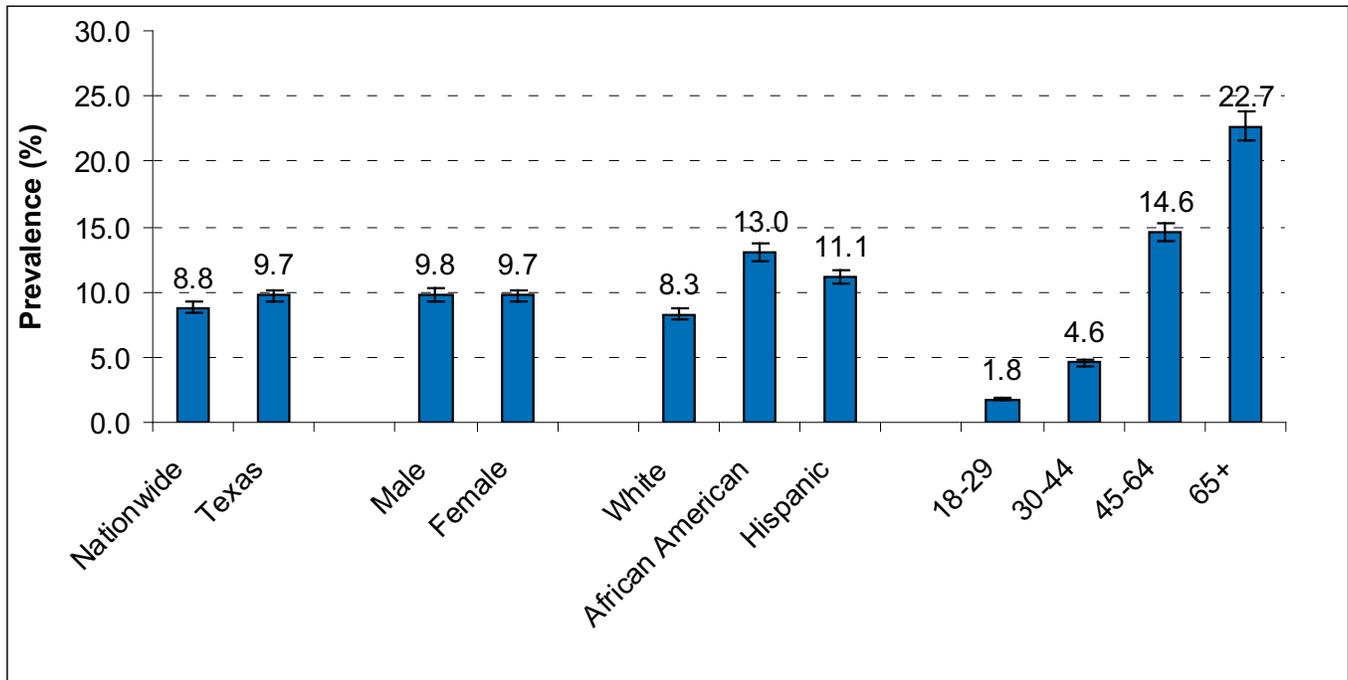
Figure 31. Prevalence of Diabetes Among Adults, Texas & U.S., 1995-2008



In 2008, 9.7 percent of the adult Texas population reported ever having been diagnosed with diabetes. Diabetes prevalence rose steadily from 1995 through 2008, both in Texas and nationally. The prevalence of diabetes was nearly two times higher in 2008 compared to 1995, both in Texas and nationally.

Data source: BRFSS, Texas Department of State Health Services

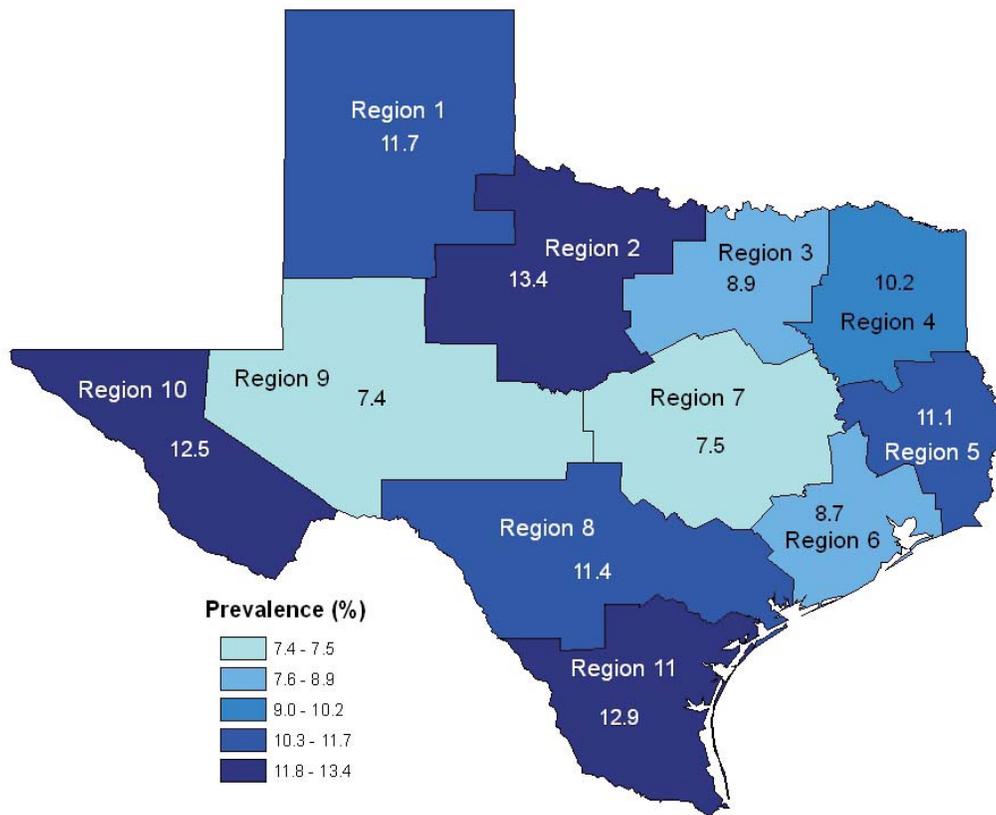
### Figure 32. Prevalence of Diabetes Among Adults, 2008



- Texas prevalence rates of diabetes were slightly higher than the national average, although this difference was not statistically significant
- Males and females had similar prevalence rates.
- African Americans and Hispanics had significantly higher prevalence rates compared to whites.
- Diabetes prevalence statistically significantly increased with age.

Data source: BRFSS, Texas Department of State Health Services

## Figure 33. Prevalence of Diabetes Among Adults by HSR, 2008

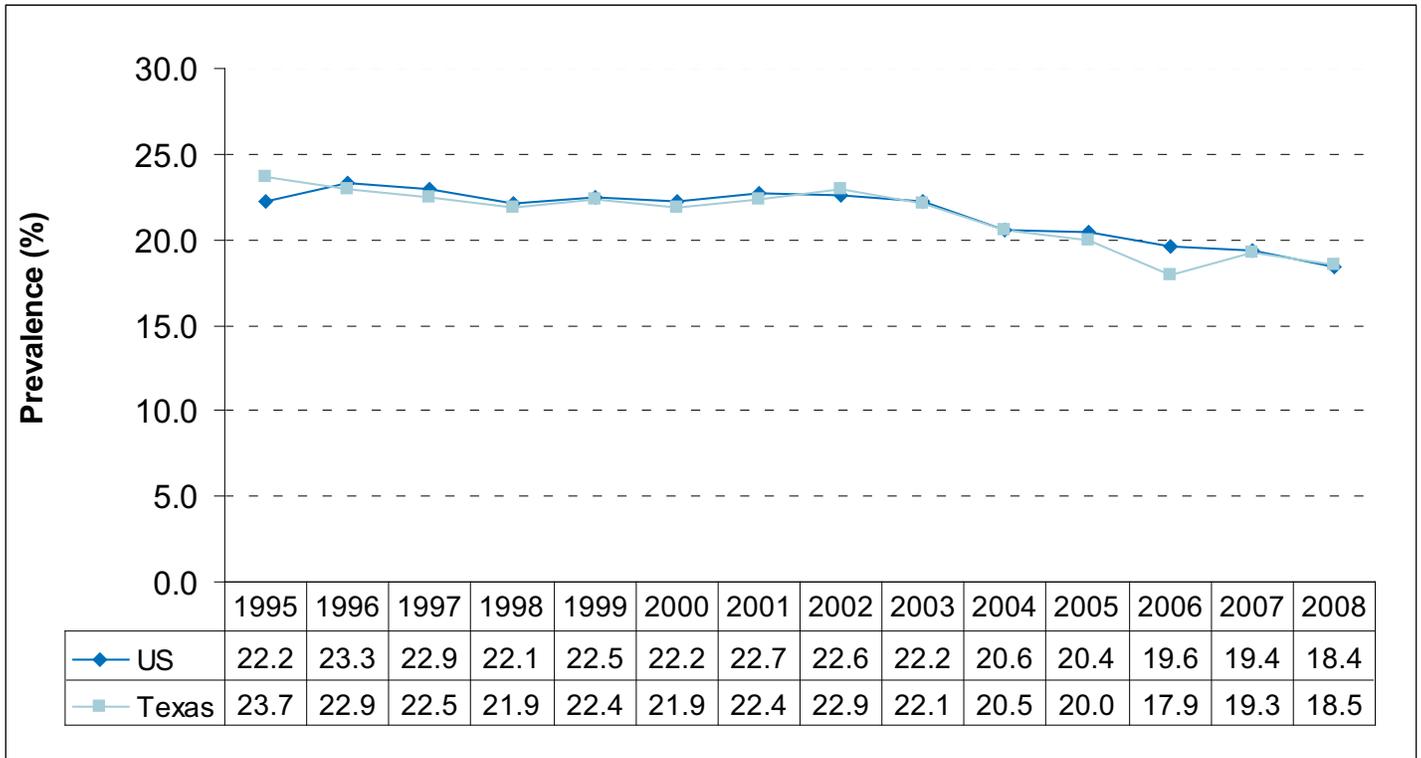


In 2008, prevalence of diabetes was highest in HSRs 2, 10, and 11.

Data source: BRFSS, Texas Department of State Health Services

# Smoking

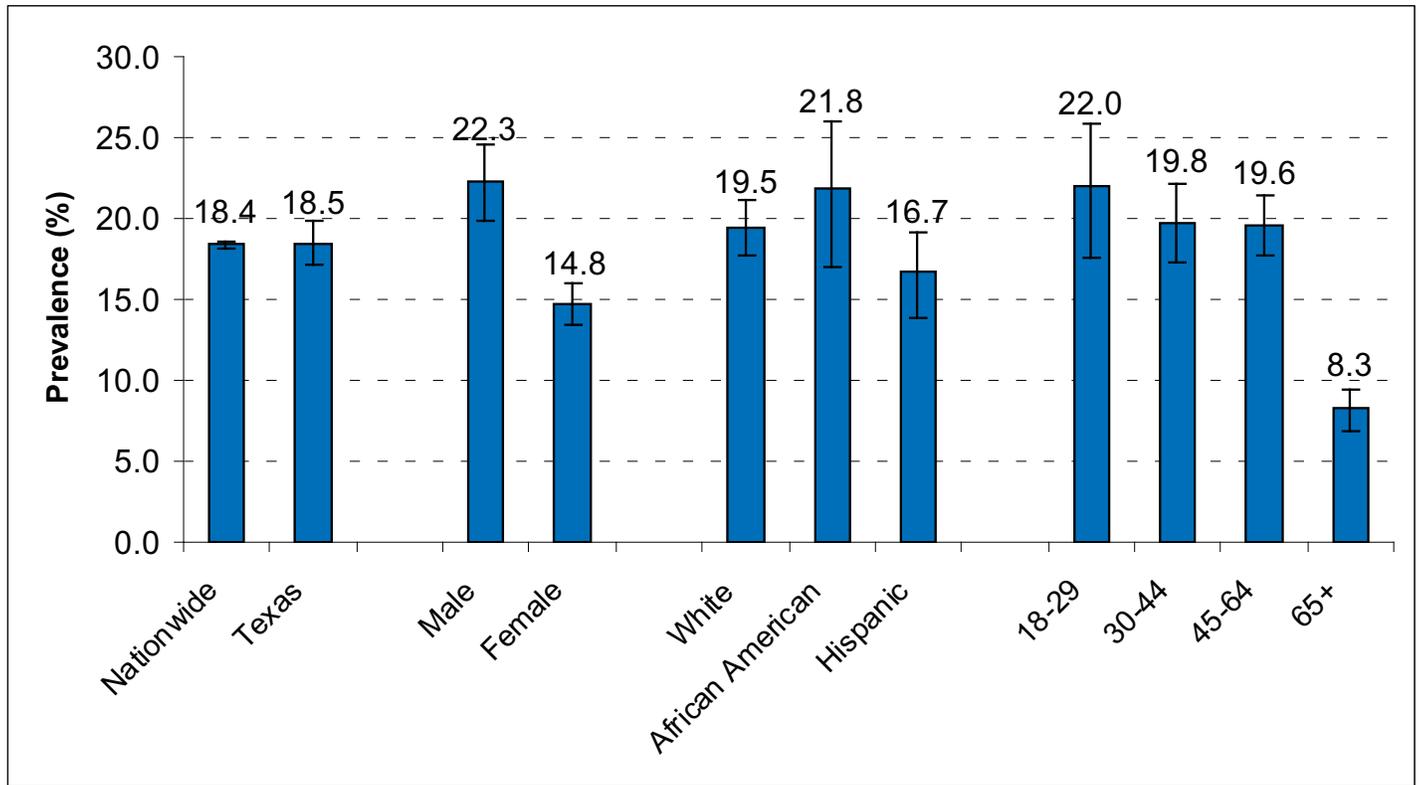
**Figure 34. Prevalence of Cigarette Smoking Among Adults, Texas & U.S., 1995- 2008**



Prevalence of adult smoking in Texas decreased significantly from 23.7 percent in 1995 to 18.5 percent in 2008. There were no statistically significant differences between Texas and the U.S. during this time period.

*Data source: BRFSS, Texas Department of State Health Services*

**Figure 35. Prevalence of Cigarette Smoking Among Adults, 2008**

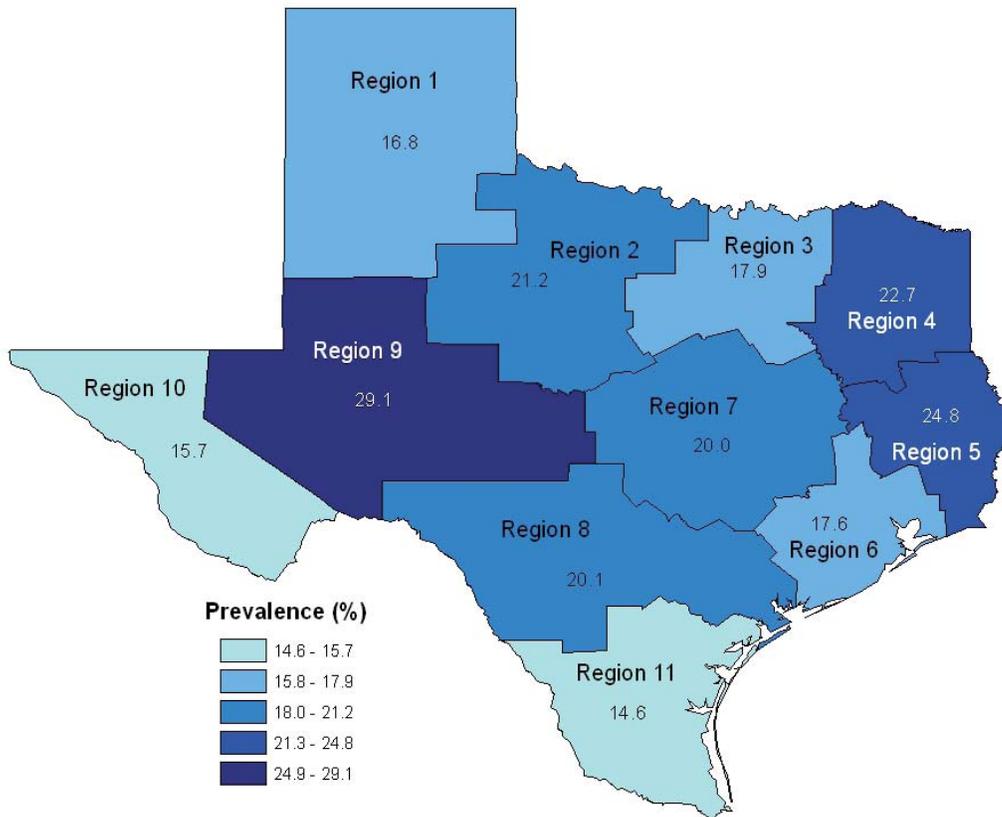


- Texas prevalence rates of cigarette smoking were similar to the national average.
- Males had a significantly higher prevalence rate compared to females.
- African Americans and whites had slightly higher prevalence rates compared to Hispanics, although this difference was not statistically significant.
- Cigarette smoking prevalence decreased with increasing age, although not all of the comparisons achieved statistical significance. Adults age 65+ had significantly lower rates than the other age groups.

Data source: BRFSS, Texas Department of State Health Services

# Smoking

**Figure 36. Prevalence of Cigarette Smoking Among Adults by HSR, 2008**

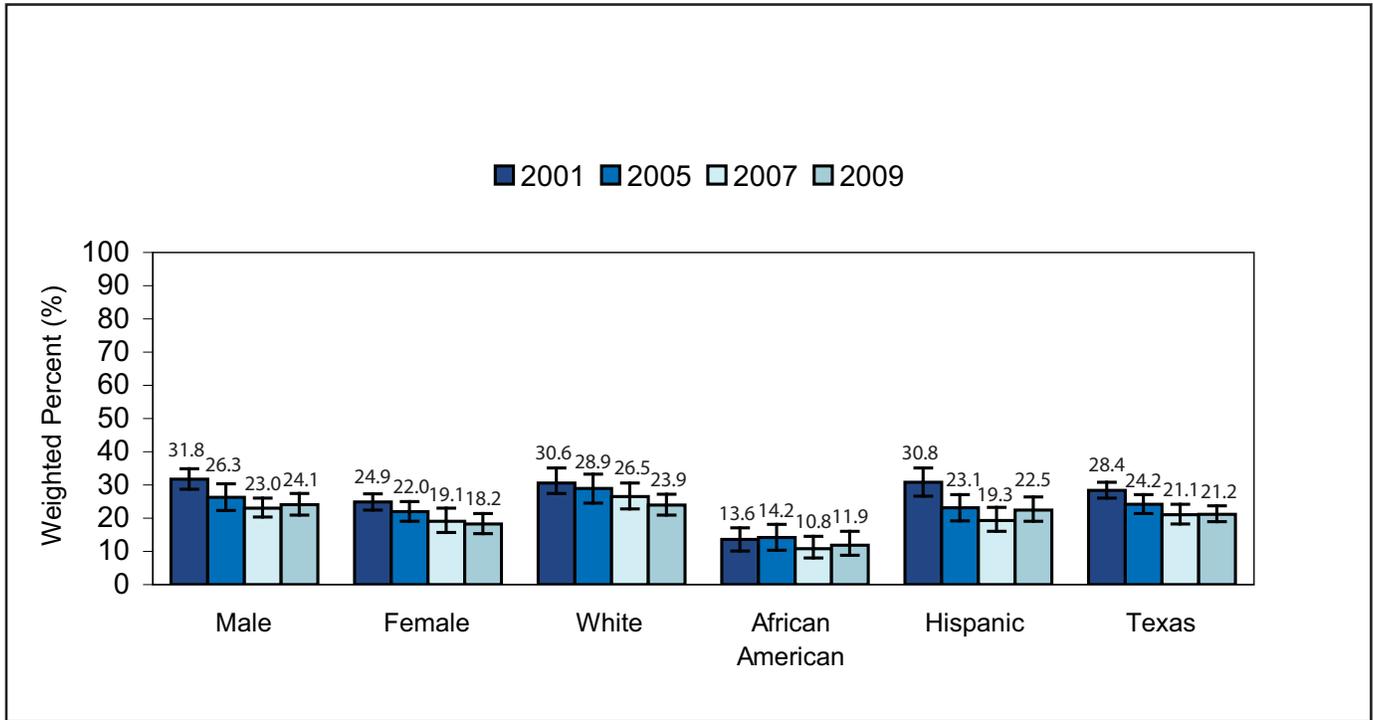


In 2008, prevalence of cigarette smoking was highest in HSR 9.

Data source: BRFSS, Texas Department of State Health Services

# Smoking

**Figure 37. Percentage of High School Students Who Smoked One or More Cigarettes During the Past 30 Days, 2001, 2005, 2007 & 2009**

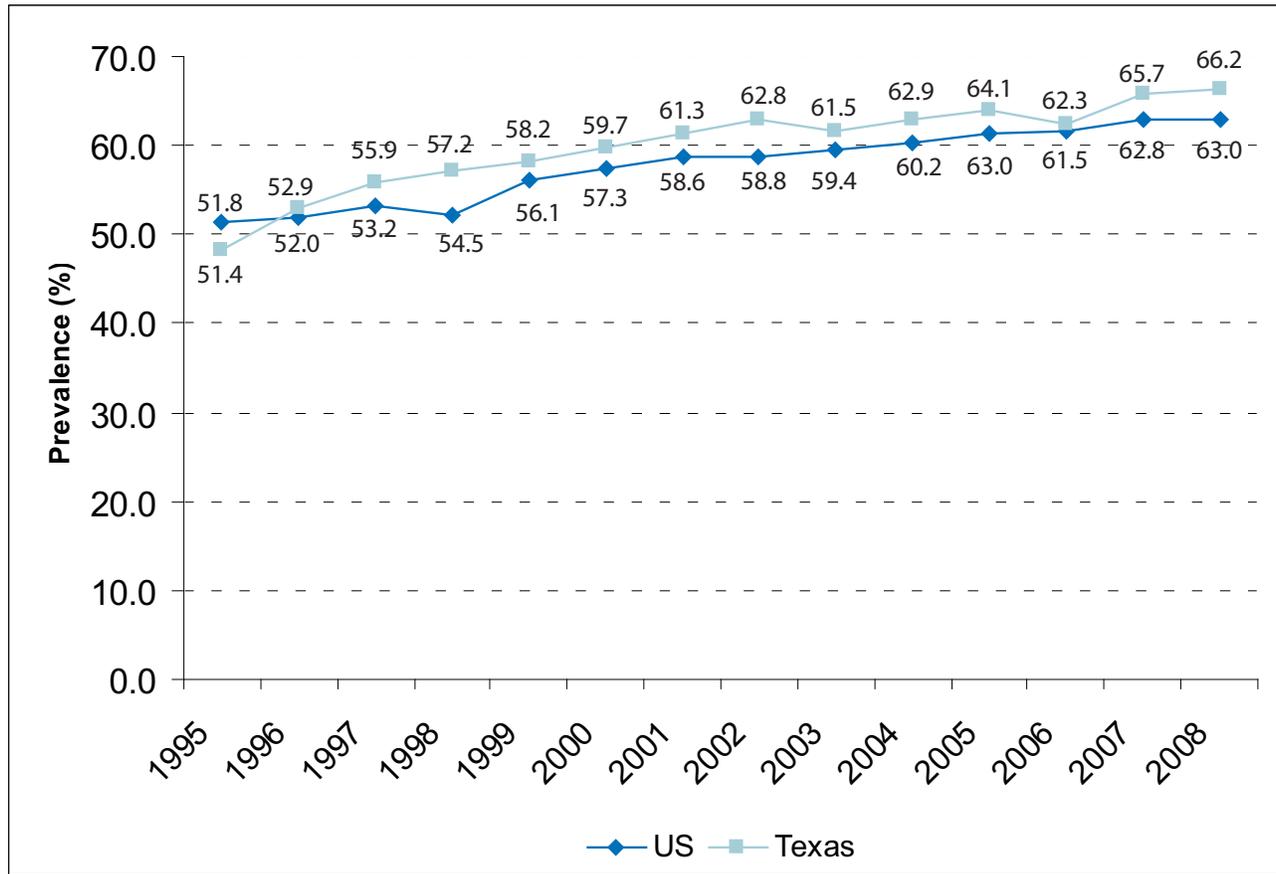


- The prevalence of Texas students who reported current cigarette use (i.e., smoked cigarettes on > 1 of the 30 days preceding the survey) decreased significantly from 28.4 percent in 2001 to 21.2 percent in 2009.
- All subgroups, with the exception of African Americans, experienced a significant decrease in current cigarette use from 2001 to 2009.
- Overall, African American students were less likely to report current cigarette use than Hispanic or white students.

Data source: YRBS, Texas Department of State Health Services

## Overweight and Obesity

Figure 38. Prevalence of Overweight and Obesity Among Adults, Texas & U.S., 1995-2008

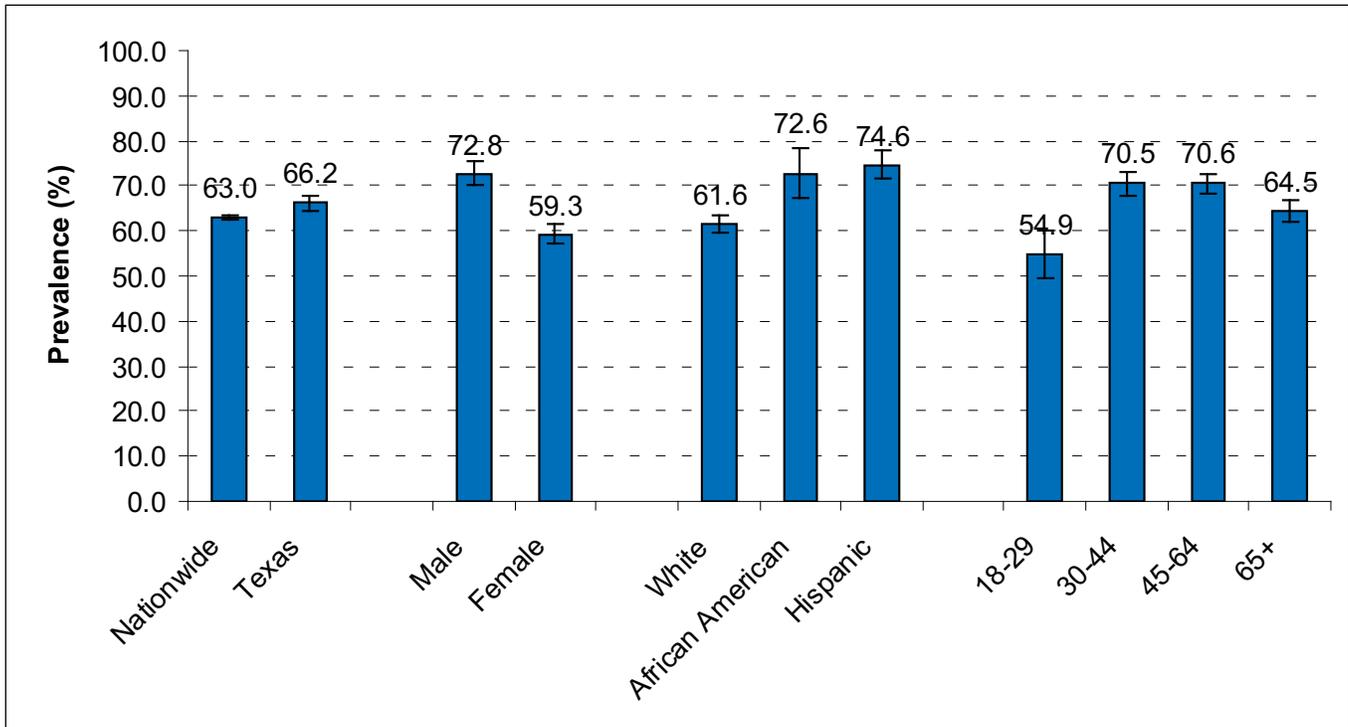


The prevalence of overweight and obesity (body mass index  $\geq 25$ ) has increased considerably over the years. From 1995 through 2008, the prevalence of overweight and obesity increased by 28.8 percent in Texas and 21.6 percent in the U.S. Texas prevalence rates of overweight and obesity have been higher than the national average since 1996.

Data source: BRFSS, Texas Department of State Health Services

# Overweight and Obesity

Figure 39. Prevalence of Overweight and Obesity Among Adults, 2008

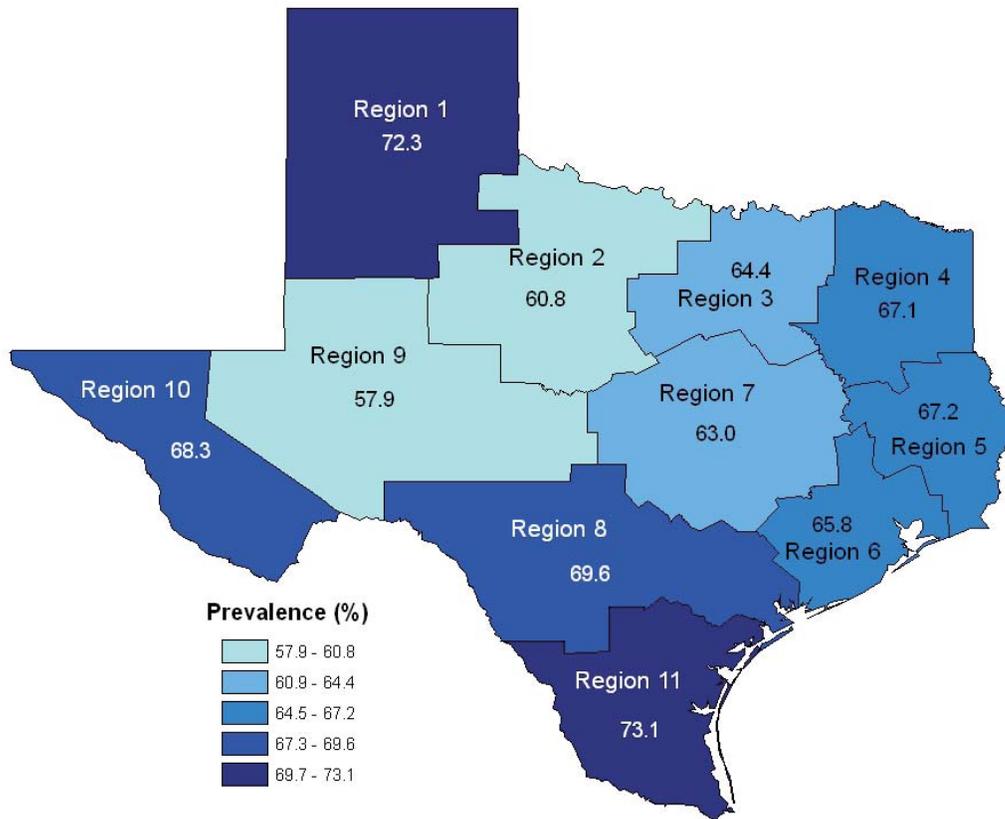


- Texas prevalence rates of overweight and obesity were statistically significantly higher than the national average.
- Males had a significantly higher prevalence rate of overweight and obesity compared to females.
- African Americans and Hispanics had significantly higher prevalence of overweight and obesity compared to whites.
- Persons age 18-29 had significantly lower rates of overweight and obesity compared to persons age 30+.

Data source: BRFSS, Texas Department of State Health Services

# Overweight and Obesity

Figure 40. Prevalence of Overweight and Obesity Among Adults by HSR, 2008



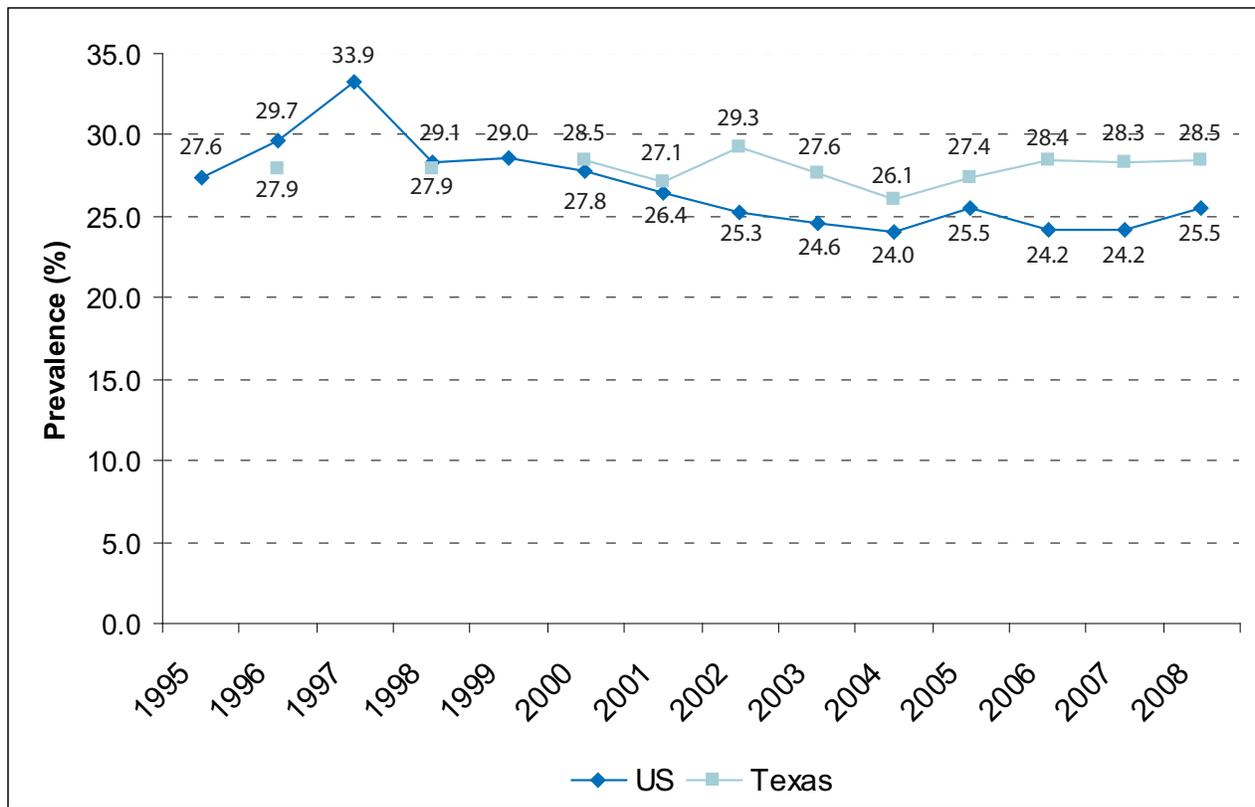
In 2008, prevalence of overweight and obesity was highest in HSRs 1 and 11.

Data source: BRFSS, Texas Department of State Health Services

Prevalence

# Overweight and Obesity

**Figure 41. Prevalence of No Leisure Time Physical Activity Among Adults, Texas & U.S., 1995-2008**



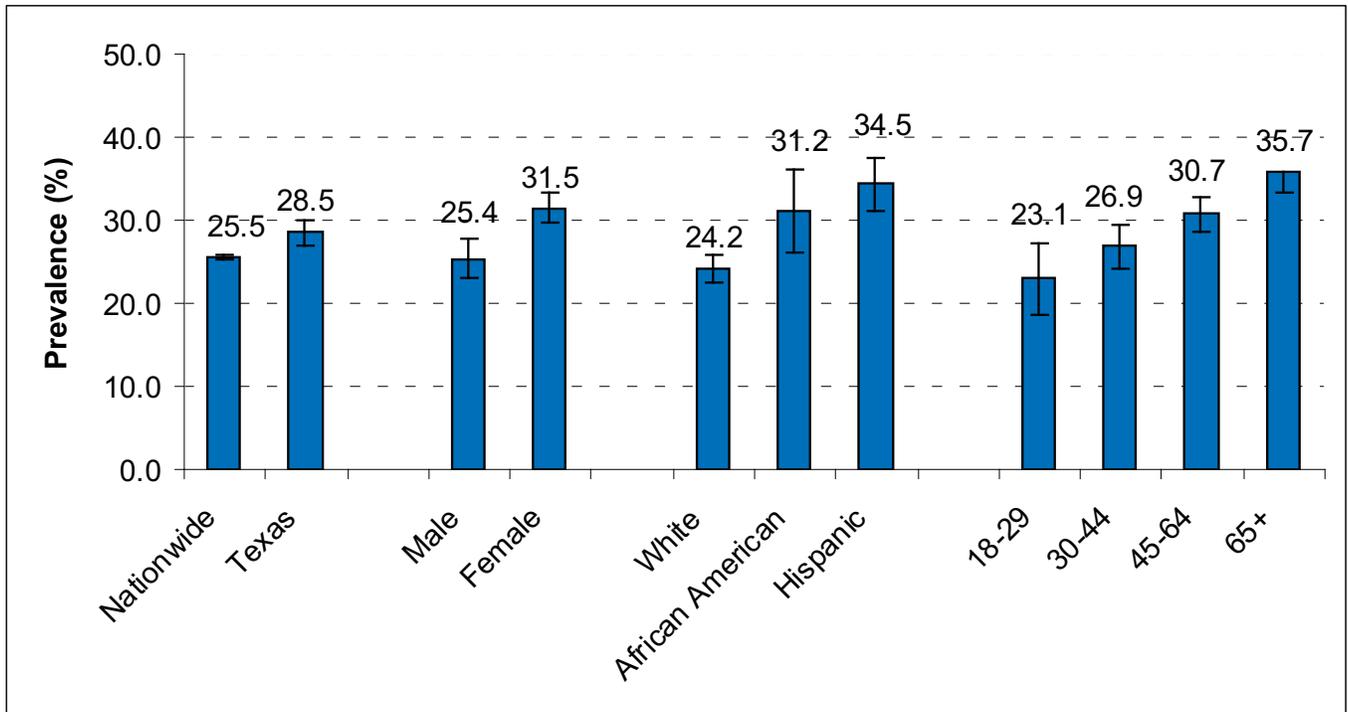
From 2000 to 2008, the percentage of individuals who reported participating in no leisure time physical activity remained relatively unchanged for both Texas and the U.S. Prevalence of no leisure time physical activity has been slightly higher in Texas than in the U.S. since 2001.

Note: Texas data not available for 1995, 1997, or 1999.

Data source: BRFSS, Texas Department of State Health Services

# Overweight and Obesity

Figure 42. Prevalence of No Leisure Time Physical Activity Among Adults, 2008

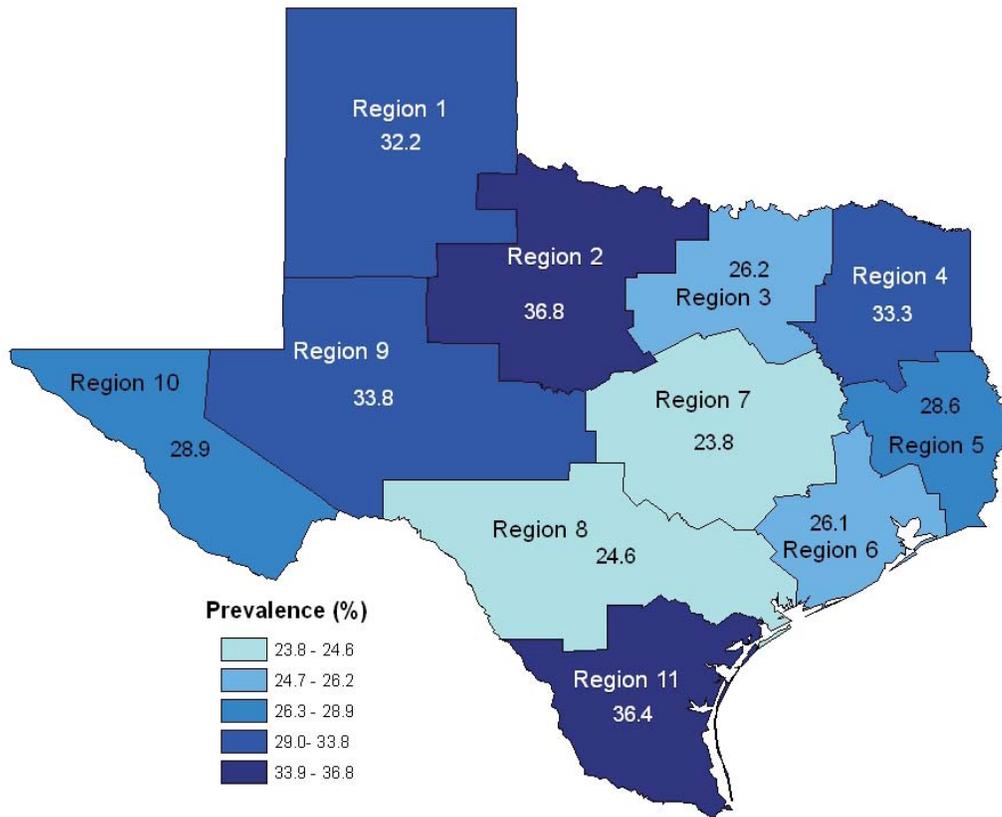


- Texas prevalence rates of no leisure time physical activity were significantly higher than the national average.
- Females were significantly less likely to participate in leisure time physical activity compared to males.
- Among the race/ethnicity groups, African Americans and Hispanics had significantly higher prevalence rates of no leisure time physical activity compared to whites.
- Persons age 65 and older had significantly higher rates of no leisure time physical activity compared to other age groups.

Data source: BRFSS, Texas Department of State Health Services

# Overweight and Obesity

**Figure 43. Prevalence of No Leisure Time Physical Activity Among Adults by HSR, 2008**

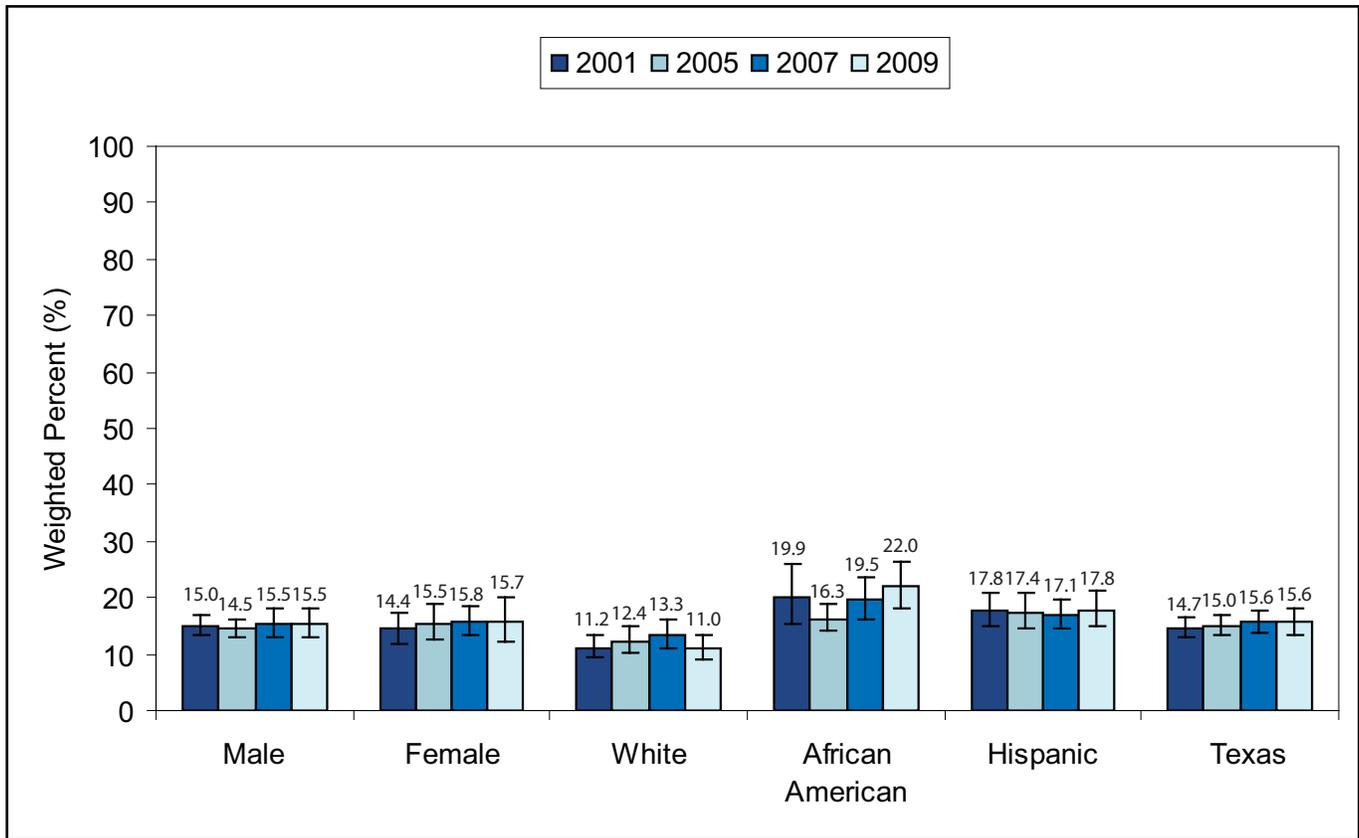


In 2008, prevalence of no leisure time physical activity was highest in HSRs 2 and 11.

Data source: BRFSS, Texas Department of State Health Services

# Overweight and Obesity

**Figure 44. Percentage of High School Students Who Are Overweight\*, 2001, 2005, 2007 & 2009**



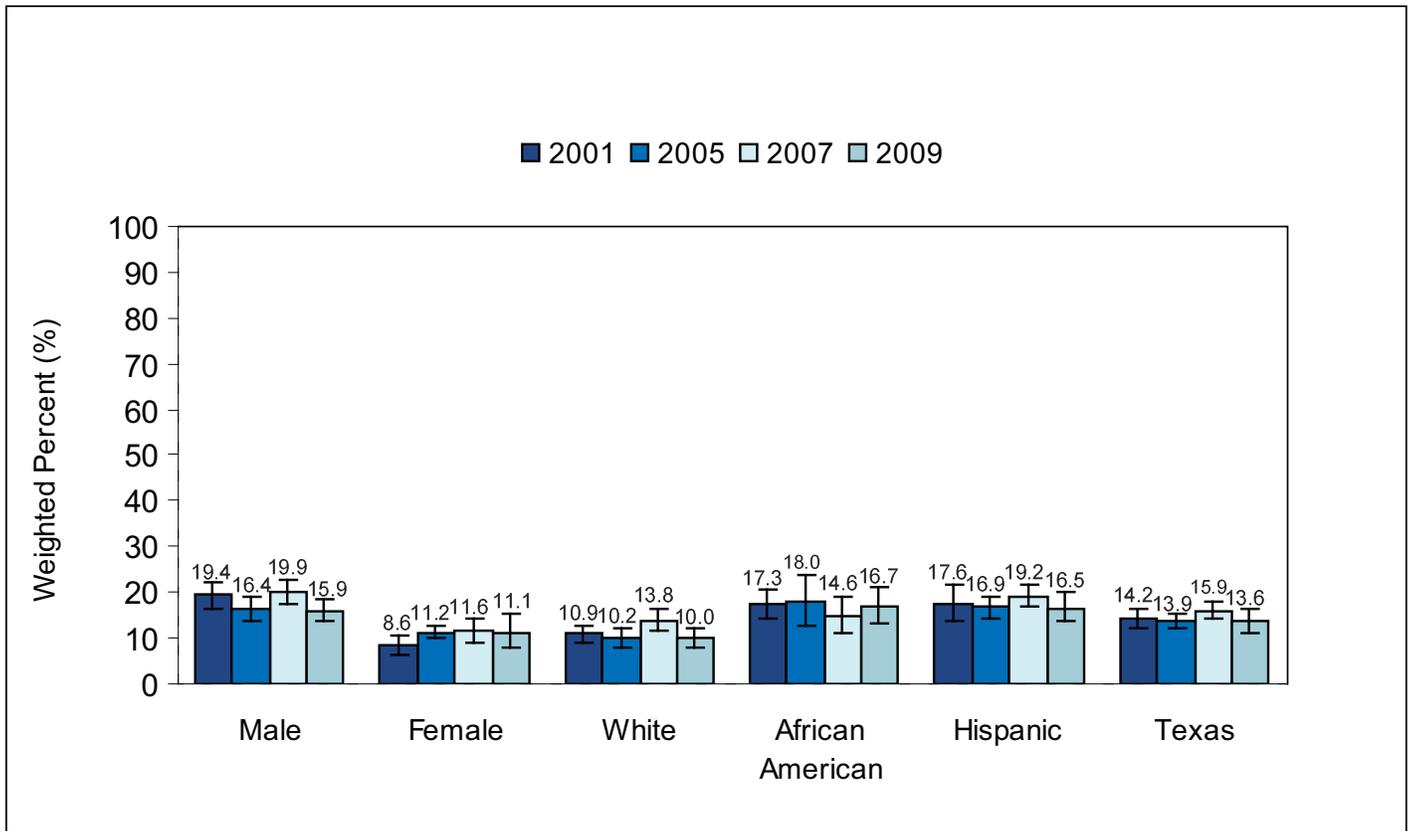
- The percentage of students who were overweight increased slightly from 2001 (14.7%) to 2009 (15.6%). However, the increase was not statistically significant.
- In 2009, the percentage of students who were overweight was greater among African American (22.0%) and Hispanic students (17.8%) than among white students (11.0%). The differences were statistically significant.
- No significant differences existed among students by gender.

\*Overweight: at or above the 85th percentile but below the 95th percentile for body mass index, by age and sex. Based on reference data from the National Health and Nutrition Examination Survey I and the 2000 CDC Growth Charts.

Data source: YRBS, Texas Department of State Health Services

# Overweight and Obesity

**Figure 45. Percentage of High School Students Who Are Obese\*, 2001, 2005, 2007 & 2009**



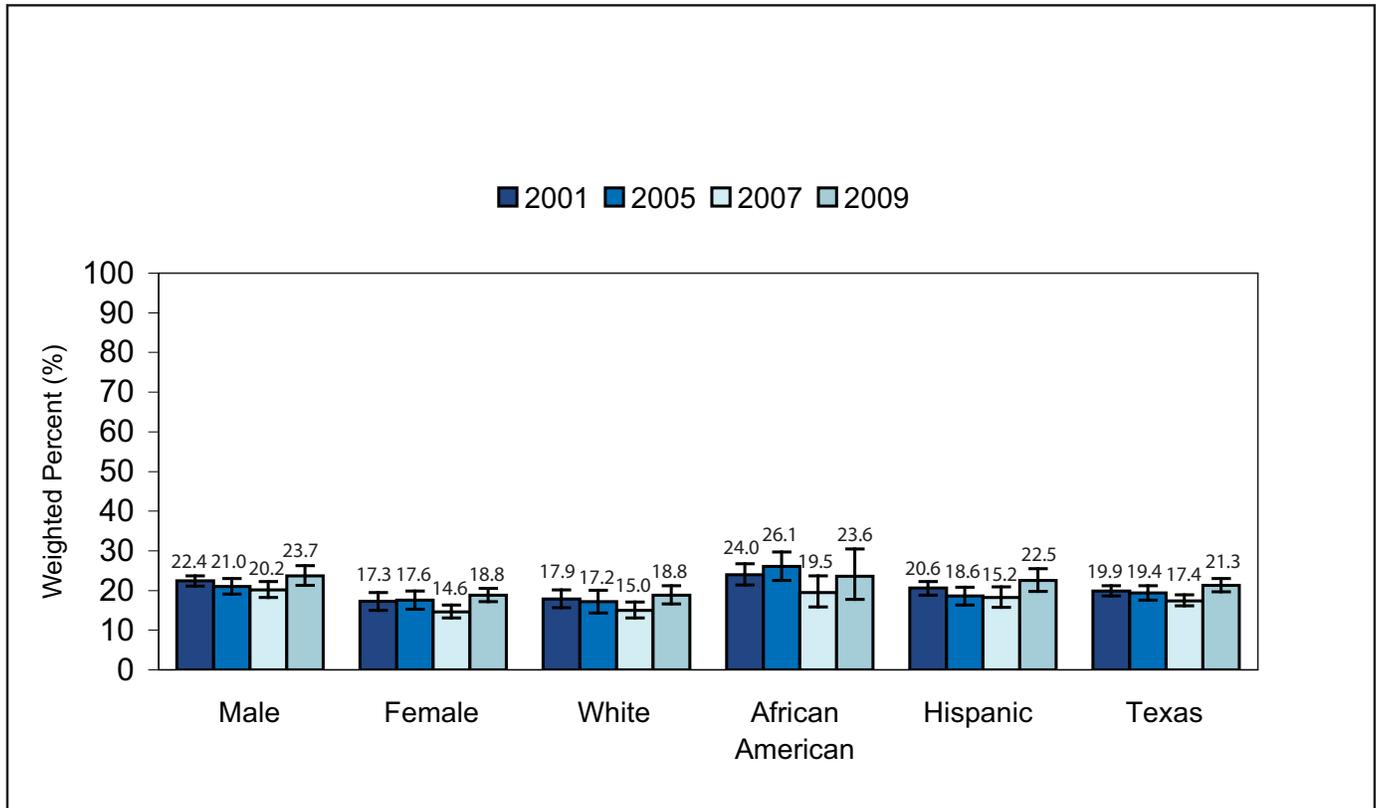
- The percentage of high school students who reported being obese decreased from 14.2% in 2001 to 13.6% in 2009. However, the decrease was not statistically significant.
- Male students were more likely to report being obese than female students across all years reported.
- In 2009, the percentage of students who were obese was greater among African American (16.7%) and Hispanic students (16.5%) than among white students (10.0%).

\*Obese: at or above the 95th percentile for body mass index, by age and sex.

Data source: YRBS, Texas Department of State Health Services

## Overweight and Obesity

**Figure 46. Percentage of Students Who Ate Fruits and Vegetables 5 or More Times per Day During the Past 7 Days, 2001, 2005, 2007 & 2009**

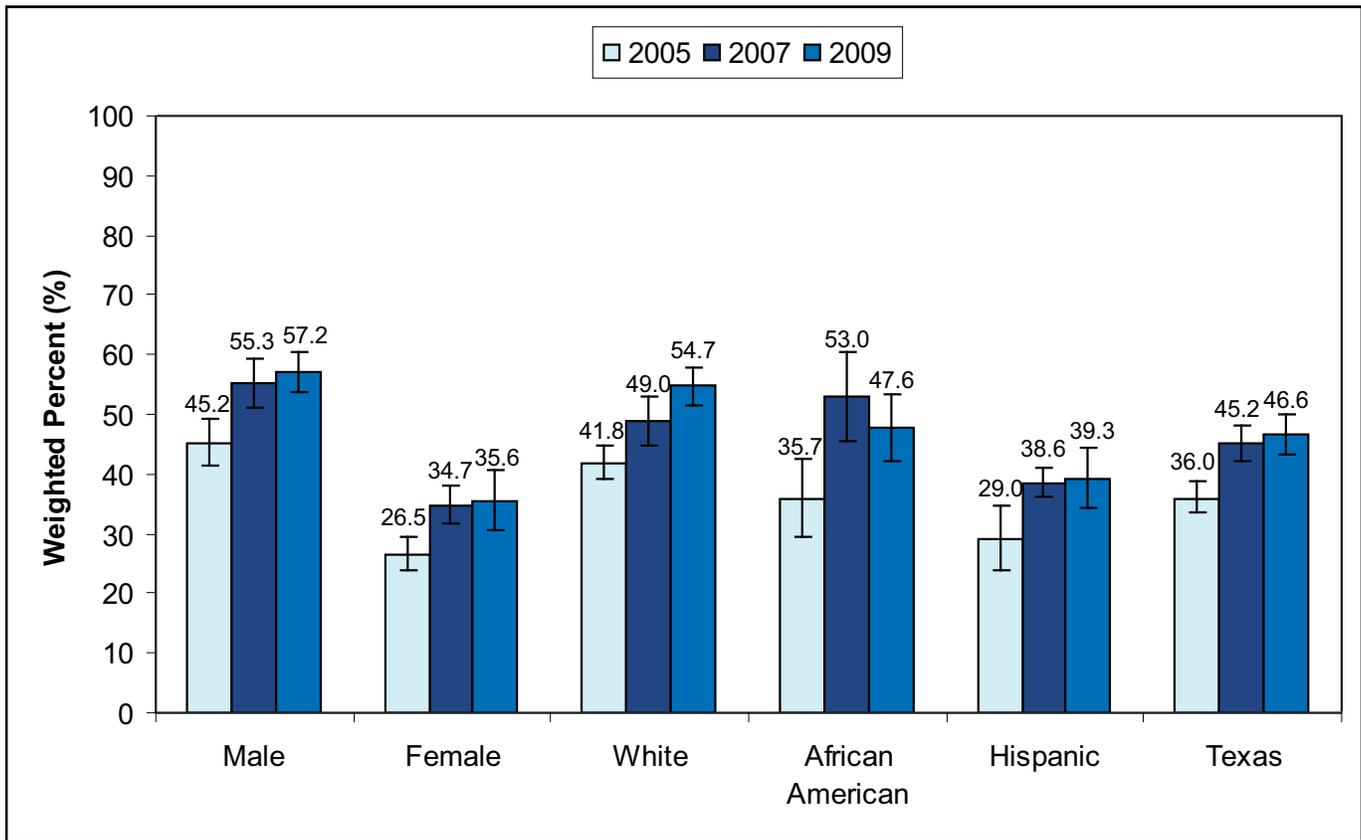


- The percentage of students who reported that they ate fruits and vegetables five or more times per day during the past seven days decreased from 19.9 percent in 2001 to 17.4 percent in 2007. It then increased to 21.3 percent in 2009.
- Male students (20.2 in 2007, 23.7% in 2009) are more likely to report that they ate fruits and vegetables five or more times per day during the past seven days than female students (14.6% in 2007, 18.8% in 2009). The difference is statistically significant.
- Overall, African American students (19.5% in 2007, 23.6% in 2009) were more likely to report that they ate fruits and vegetables five or more times per day during the past seven days than white students (15.0% in 2007, 18.8% in 2009) and Hispanic students (18.2% in 2007, 22.5% in 2009).

Data source: YRBS, Texas Department of State Health Services

## Overweight and Obesity

**Figure 47. Percentage of High School Students Who Were Physically Active For a Total of at Least 60 Minutes per Day on Five or More of the Past 7 Days, 2005, 2007, 2009**

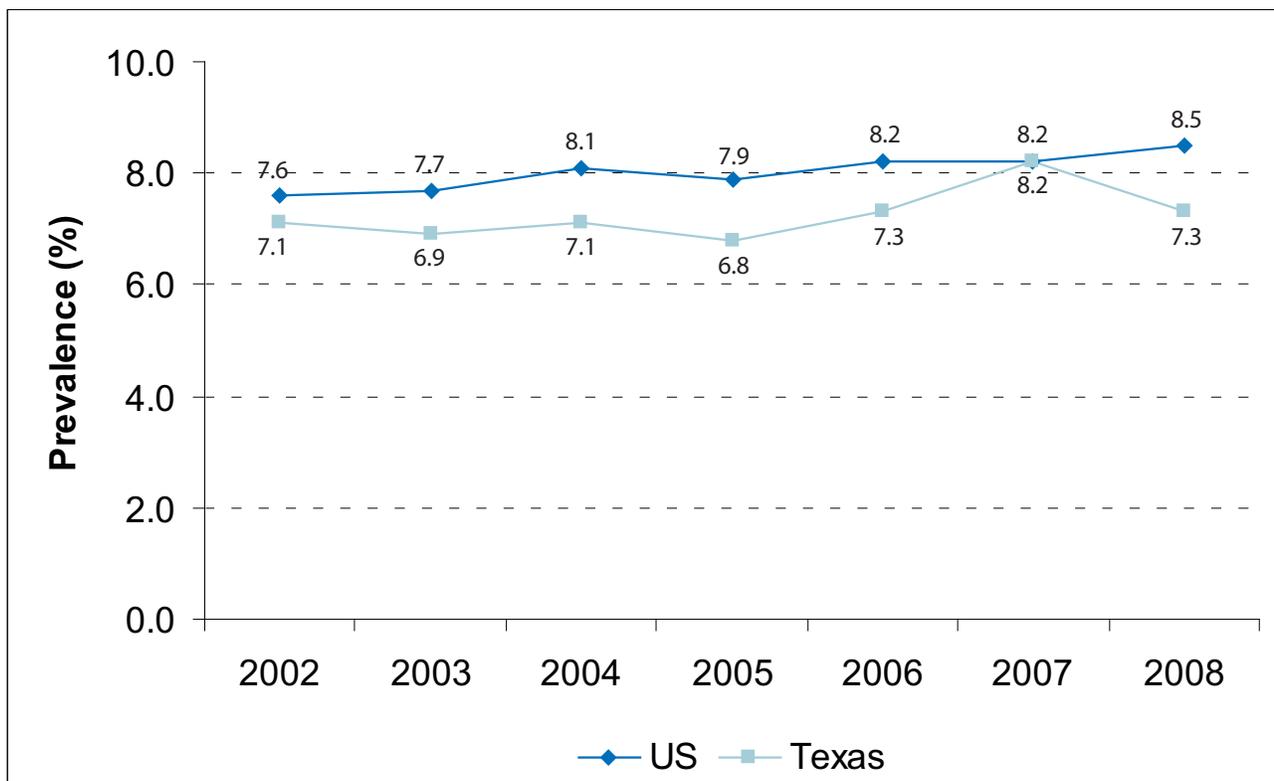


- The percentage of students who reported they were physically active for at least 60 minutes per day on five or more of the past seven days increased significantly from 2005 (36.0%) to 2009 (46.6%).
- In 2009, male students (57.2%) were significantly more likely to report they were physically active than female students (35.6%).
- In 2009, Hispanic students (39.3%) were less likely to report they were physically active compared to African American (47.6%) and white students (54.7%). The difference between Hispanics and whites was statistically significant.

Data source: YRBS, Texas Department of State Health Services

# Asthma

Figure 48. Prevalence of Current Asthma\* Among Adults, Texas & U.S., 2002-2008

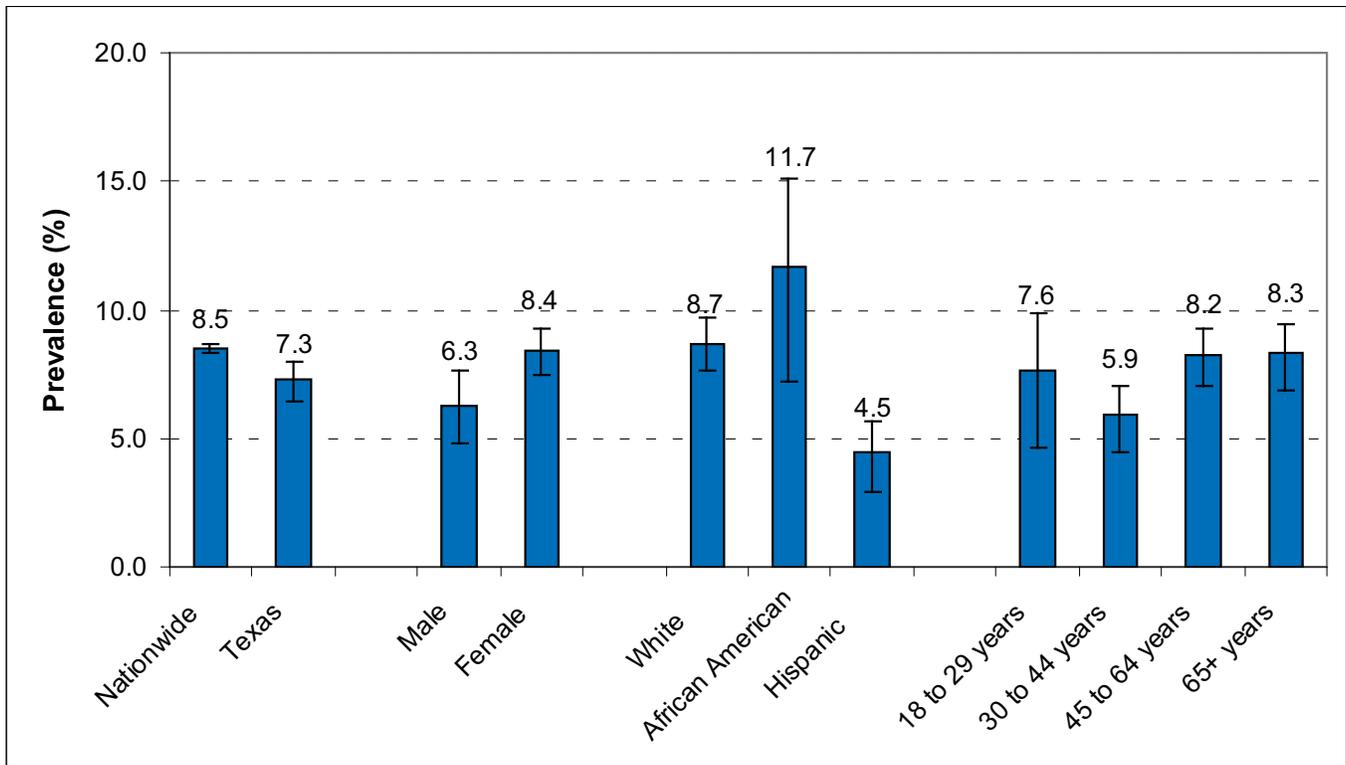


The prevalence of asthma in Texas remained relatively unchanged at approximately 7 percent between 2002 and 2008. There were no statistically significant differences between Texas and the U.S. from 2002 to 2008, although Texas had lower rates of asthma than the national average.

\*Respondents who had ever been told by a doctor, nurse, or other health professional that they had asthma and still have asthma.

Data source: BRFSS, Texas Department of State Health Services

**Figure 49. Prevalence of Current Asthma\* Among Adults, 2008**

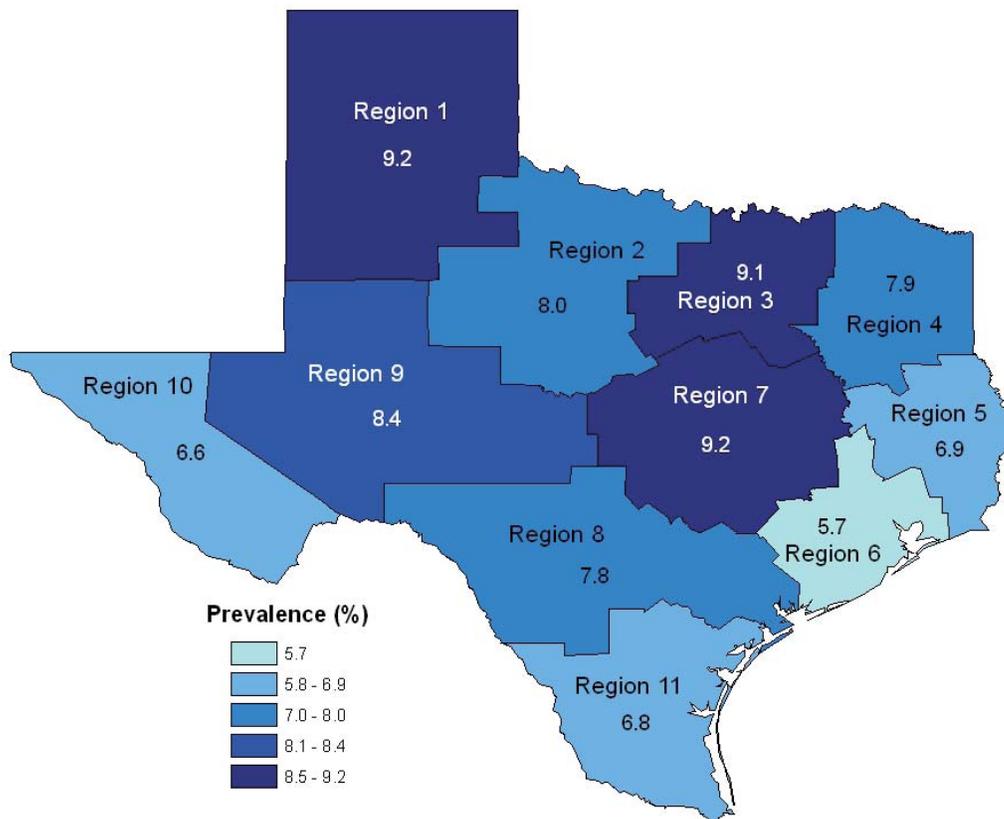


- Texas had significantly lower rates of asthma than the national average.
- Females had higher prevalence rates compared to males, but the difference was not statistically significant.
- Among the race/ethnicity groups, African Americans and whites had statistically significantly higher prevalence rates compared to Hispanics.
- Asthma prevalence among adults does not differ significantly by age.

\*Respondents who had ever been told by a doctor, nurse, or other health professional that they had asthma and still have asthma.

Data source: BRFSS, Texas Department of State Health Services

## Figure 50. Prevalence of Current Asthma\* Among Adults by HSR, 2008



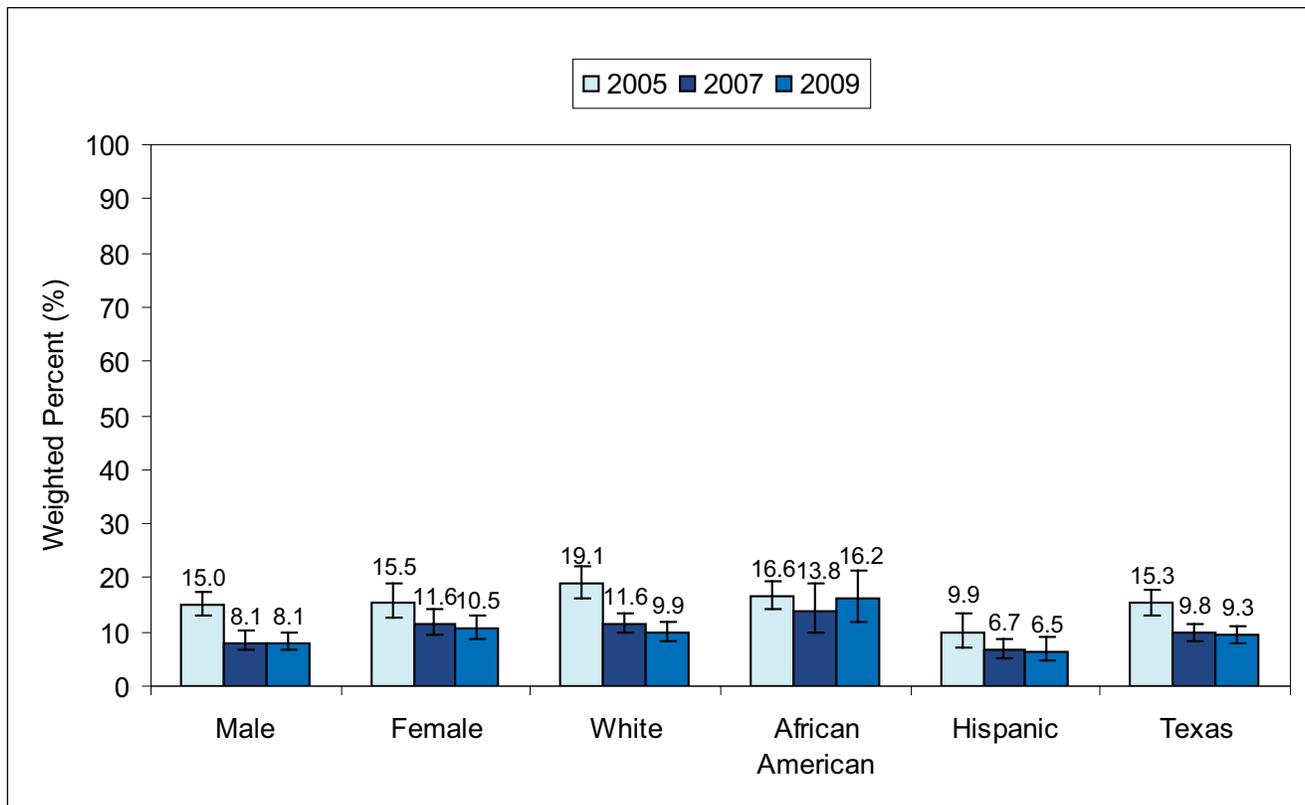
In 2008, prevalence of asthma was highest in HSRs 1, 3, and 7.

\*Respondents who had ever been told by a doctor, nurse, or other health professional that they had asthma and still have asthma.

Data source: BRFSS, Texas Department of State Health Services

# Asthma

**Figure 51. Percentage of High School Students with Current Asthma\*, 2005, 2007 & 2009**



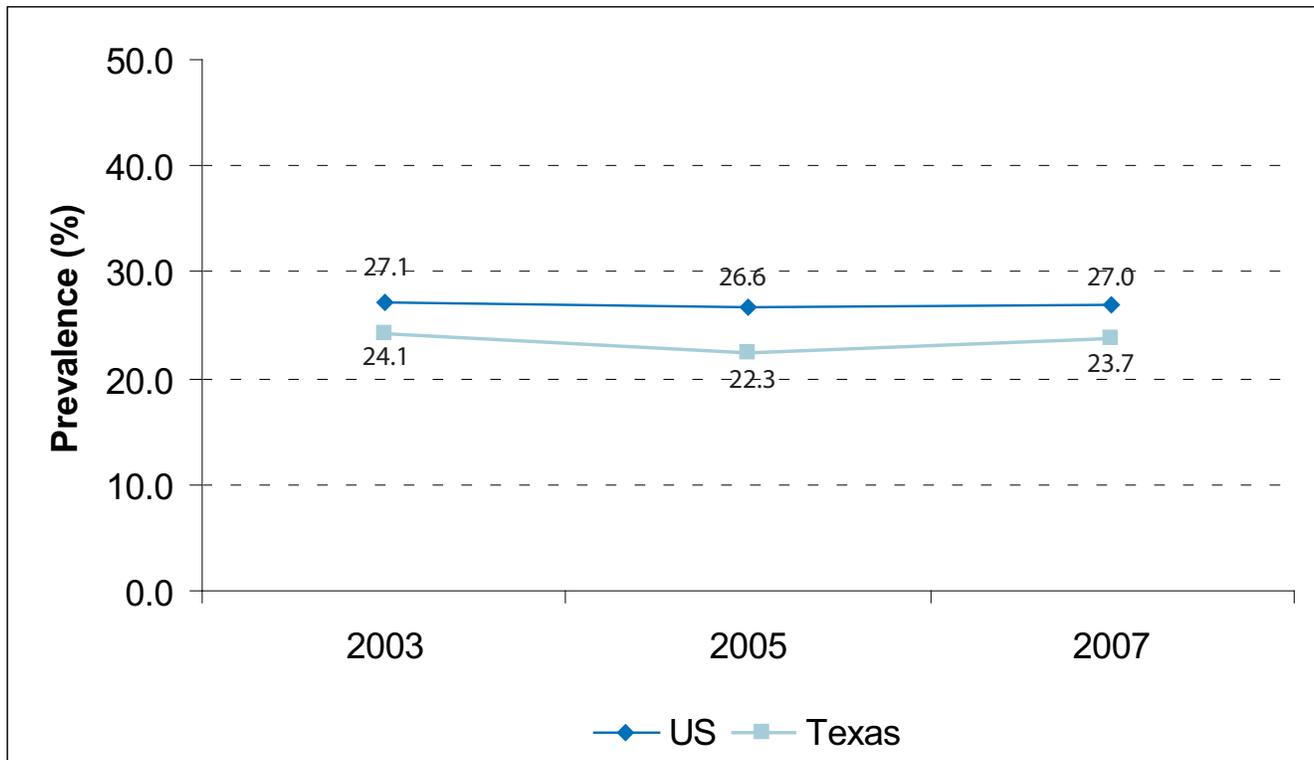
- The percentage of students who reported that they had asthma decreased from 2005 (15.3%) to 2009 (9.3%). The difference was statistically significant.
- In 2009, female students (10.5%) were more likely to report that they had asthma than male students (8.1%). However, the difference was not statistically significant.
- In 2009, African American students (16.2%) were more likely to report that they had asthma than white (9.9%) or Hispanic students (6.5%). The differences were statistically significant.

\*Students who had ever been told by a doctor or nurse that they had asthma and still have asthma.

Data source: YRBS, Texas Department of State Health Services

## Arthritis

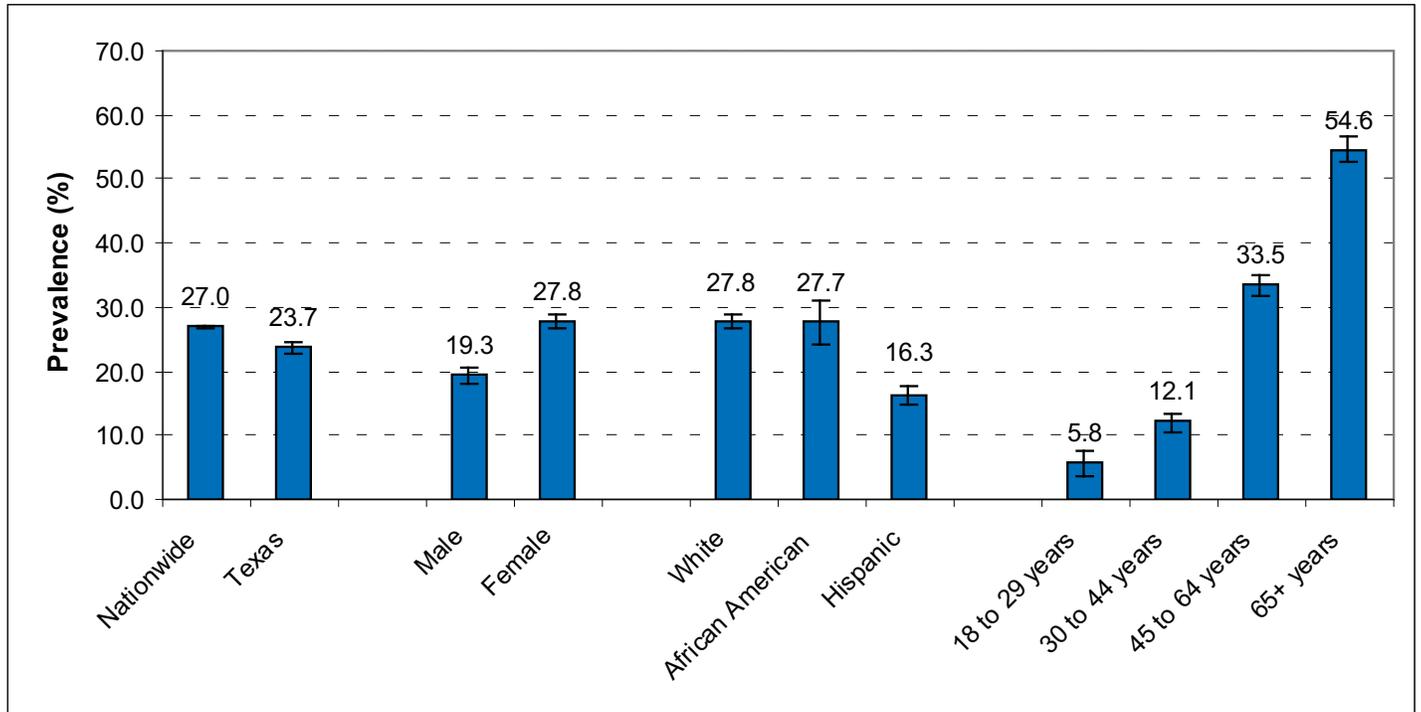
Figure 52. Prevalence of Arthritis Among Adults, Texas & U.S., 2003, 2005, & 2007



- Texas had significantly lower rates of arthritis than the national average.
- The prevalence of arthritis remained stable over the years reported. However, the prevalence of arthritis in adult Texans remains high, at 24 percent, or almost 1 in every 4 adults.

Data source: BRFSS, Texas Department of State Health Services

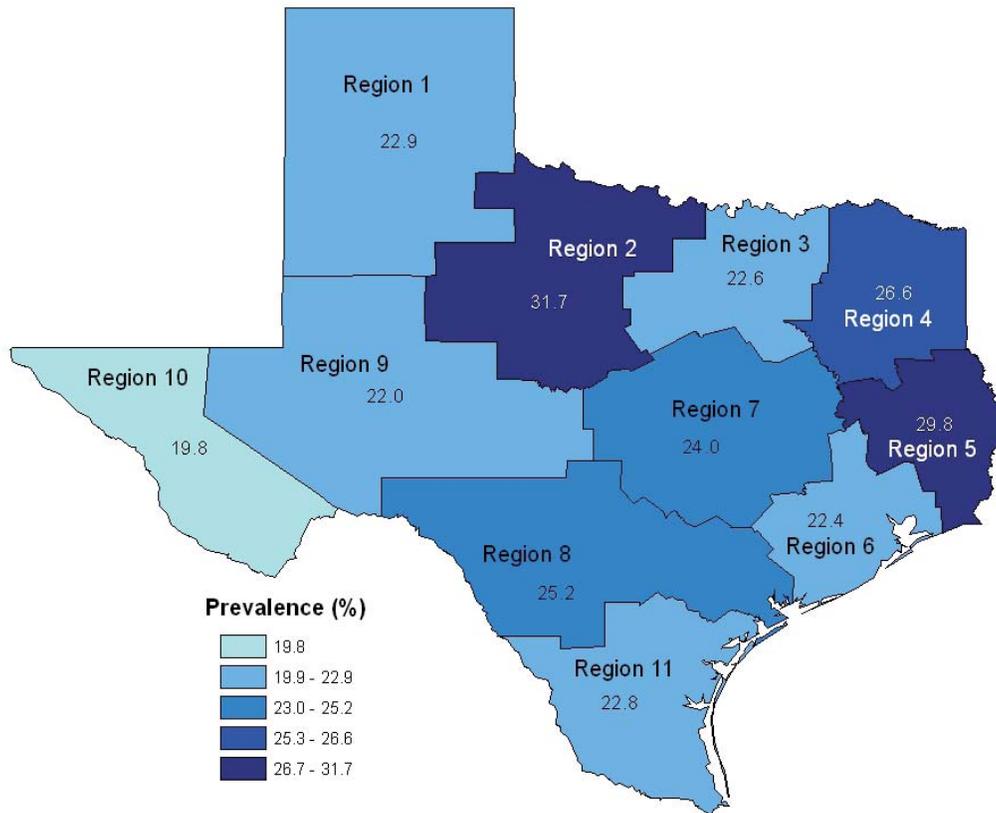
**Figure 53. Prevalence of Arthritis Among Adults, 2007**



- Texas had significantly lower rates of arthritis than the national average.
- Females had significantly higher prevalence rates compared to males.
- Among the race/ethnicity groups, whites and African Americans had significantly higher prevalence rates than Hispanics.
- Arthritis prevalence increased significantly with increasing age.

Data source: BRFSS, Texas Department of State Health Services

## Figure 54. Prevalence of Arthritis Among Adults by HSR, 2007



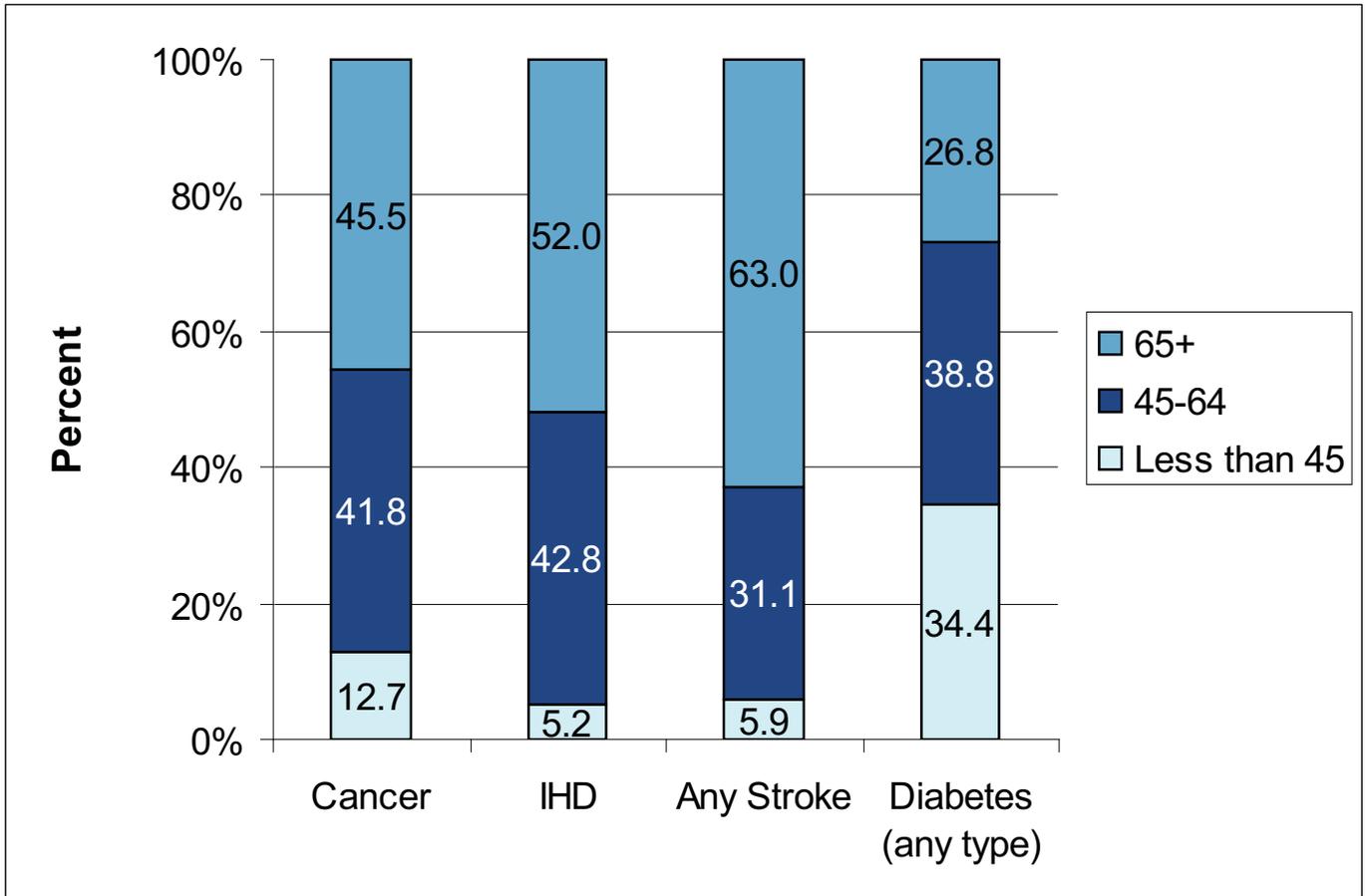
In 2007, prevalence of arthritis was highest in HSRs 2 and 5.

Data source: BRFSS, Texas Department of State Health Services

# Hospitalization

## Hospital Discharges

**Figure 55. Percent Distribution of Hospital Discharges by Age, Texas, 2008**

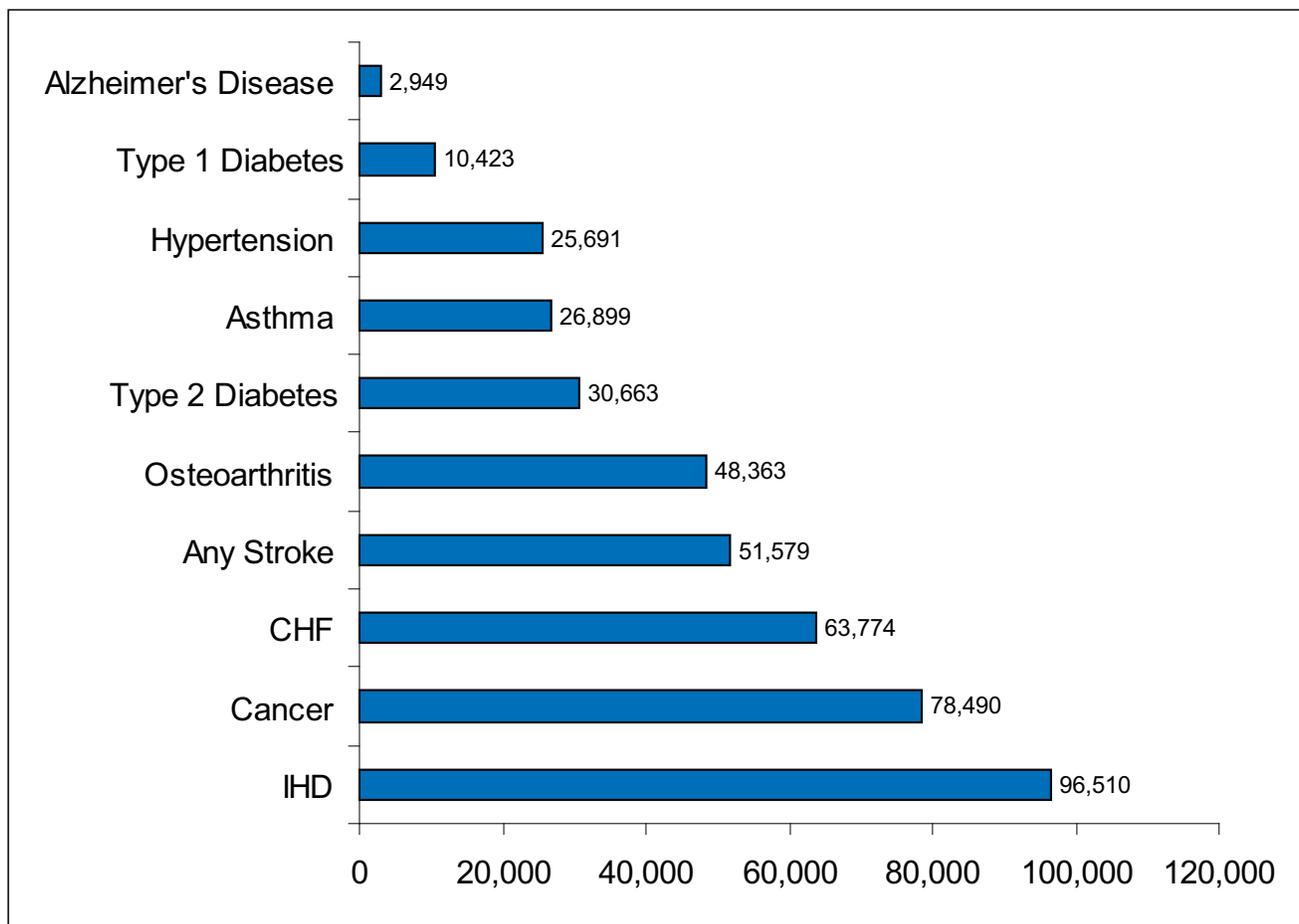


In 2008, patients aged 65 years and older accounted for the highest proportion of hospital discharges for cancer (45.5%), IHD (52.0%) and stroke (63.0%). Discharges for diabetes-related diagnoses had a higher proportion of patients aged 45 to 64 years (38.8%) and 18 to 44 years (34.4%). Patients aged 65 years and older accounted for 26.8% of all diabetes-related hospital discharges.

Data source: THCIC, Texas Department of State Health Services

## Hospital Discharges

Figure 56. Number of Selected Hospital Discharges by Primary Diagnosis, Texas, 2008

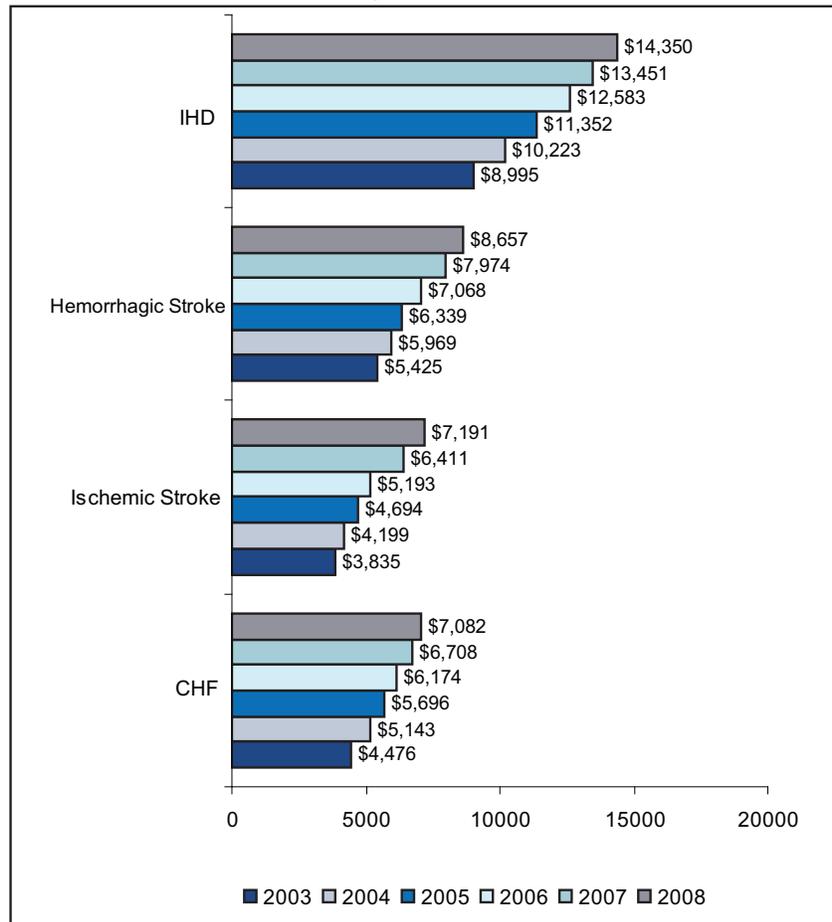


- In 2008, IHD had the highest number of discharges for chronic disease hospitalizations, followed by cancer, CHF, stroke, and osteoarthritis.
- All cancer, which includes lung, colon and rectum, breast, prostate, pancreas, non-Hodgkin's lymphoma, leukemia, stomach, bladder, oral cavity, skin-melanoma, uterine corpus, uterine cervix, Hodgkin's disease, and neuroendocrine tumor, had the second highest number of discharges for chronic disease hospitalization.

Data source: THCIC, Texas Department of State Health Services

## Average Hospital Charge per Day

**Figure 57. Estimated Average Hospital Charge per Day for Selected CVD Diagnoses, Texas, 2003-2008**

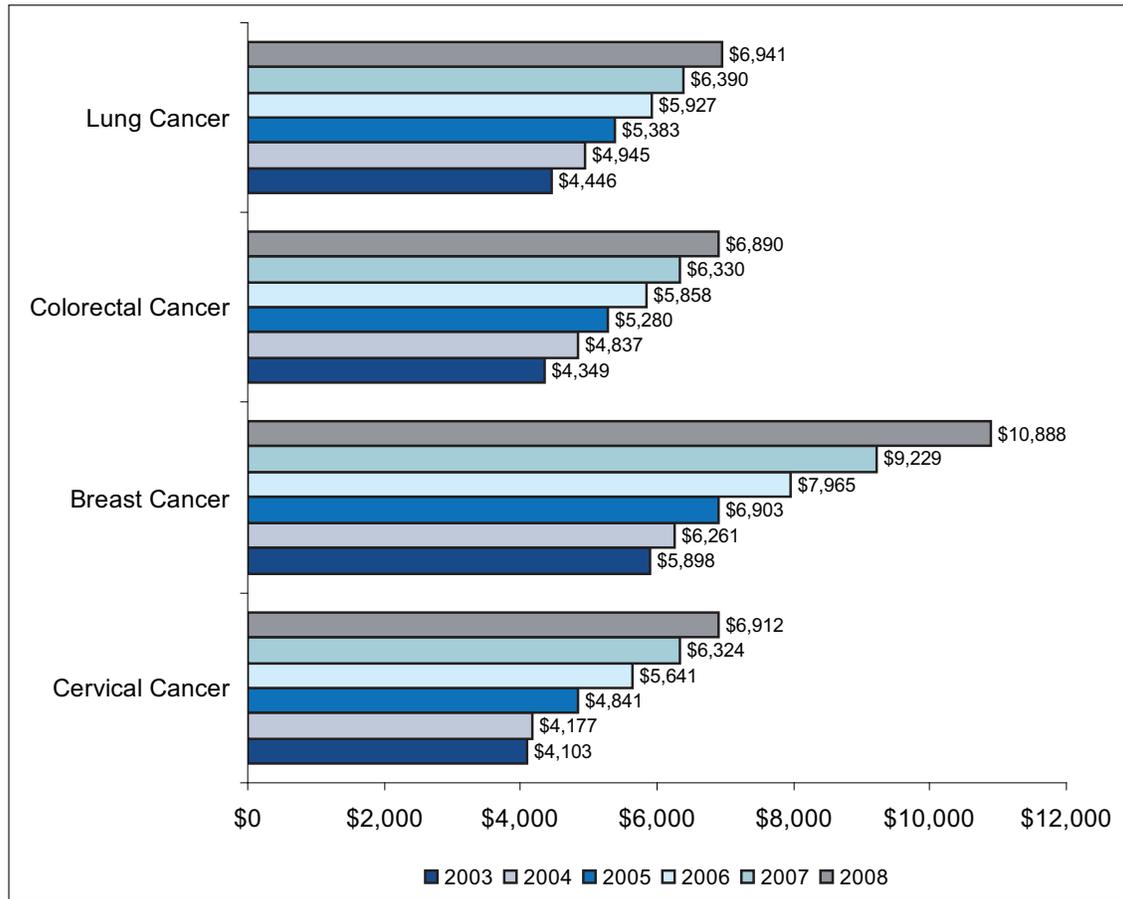


Estimated average hospital charges per day for selected CVD diagnoses have increased each year from 2003 to 2008. Among the specific CVD disease conditions, average hospital charges were highest for IHD, followed by hemorrhagic stroke, CHF, and ischemic stroke from 2003 to 2007. In 2008, average hospital charges were higher for ischemic stroke than CHF.

Data source: THCIC, Texas Department of State Health Services

## Average Hospital Charge per Day

**Figure 58. Estimated Average Hospital Charge per Day for Selected Cancer Diagnoses, Texas, 2003-2008**

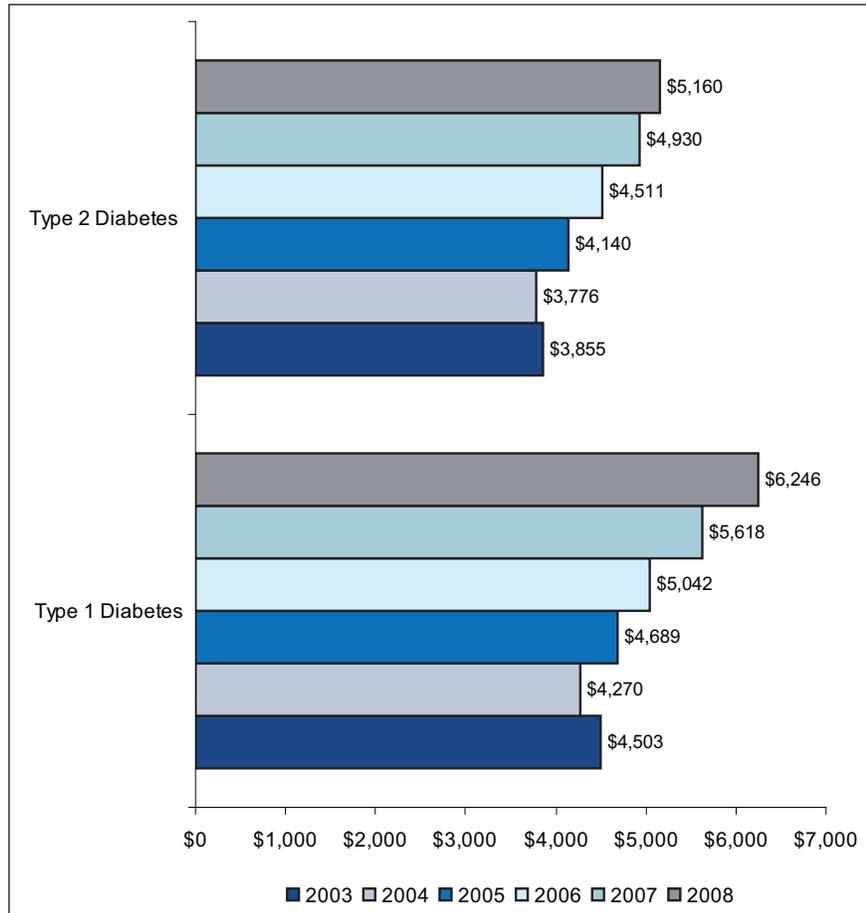


Estimated average hospital charges per day for selected cancer diagnoses have increased each year from 2003 to 2008. Among the specific cancer disease conditions, average hospital charges were highest for female breast cancer, followed by lung cancer, colorectal cancer, and cervical cancer.

Data source: THCIC, Texas Department of State Health Services

## Average Hospital Charge per Day

**Figure 59. Estimated Average Hospital Charge per Day for Selected Diabetes Diagnoses, Texas, 2003-2008**

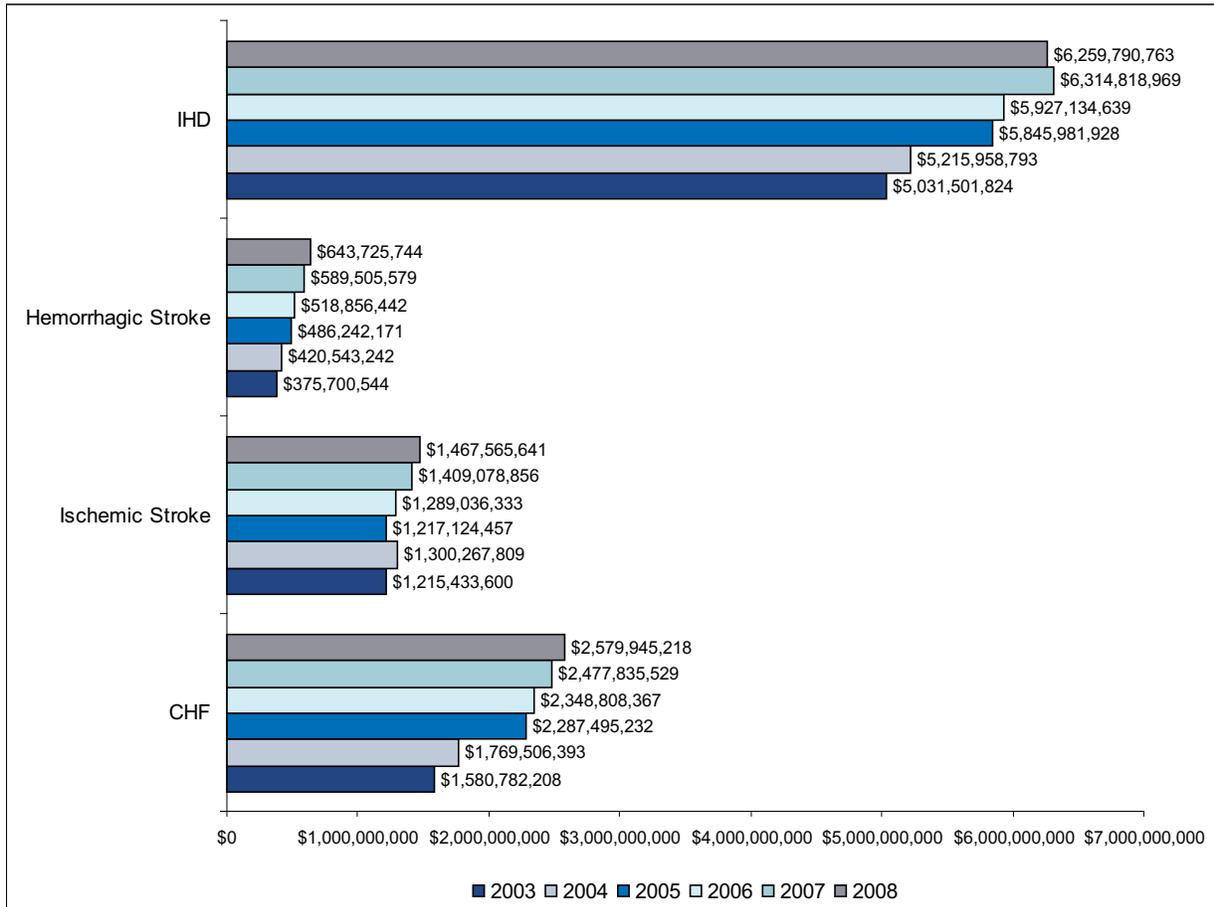


Estimated average hospital charges per day for specific types of diabetes mellitus have increased each year from 2004 to 2008. In 2008, the average hospital charge per day was highest for patients diagnosed with type 1 diabetes.

Data source: THCIC, Texas Department of State Health Services

# Total Hospital Charges

**Figure 60. Total Hospital Charges for Selected CVD Diagnoses, Texas, 2003-2008**

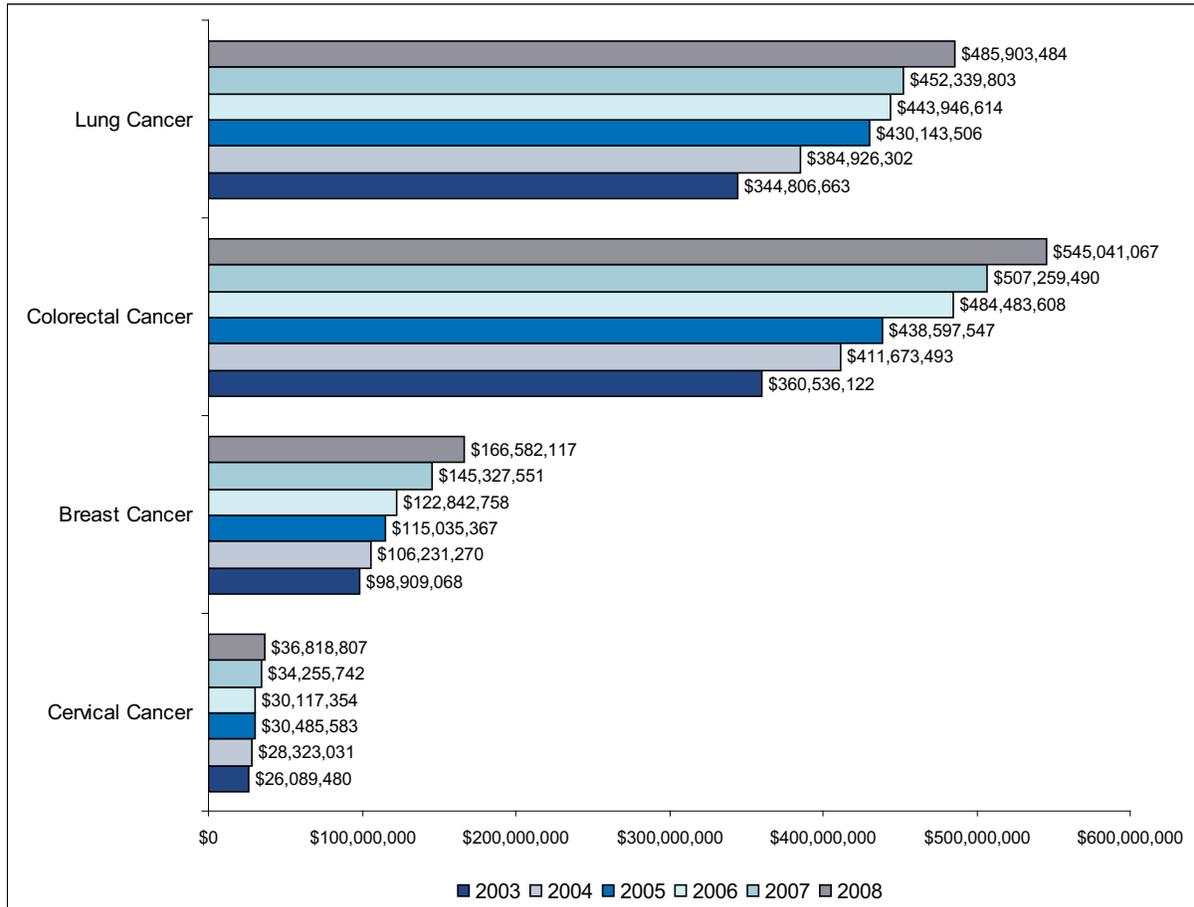


Total hospital charges for selected CVD diagnoses have increased each year from 2003 to 2008, with the exception of ischemic stroke in 2005. Total hospital charges were highest for IHD followed by CHF, ischemic stroke, and hemorrhagic stroke.

Data source: THCIC, Texas Department of State Health Services

# Total Hospital Charges

**Figure 61. Total Hospital Charges for Selected Cancer Diagnoses, Texas, 2003-2008**

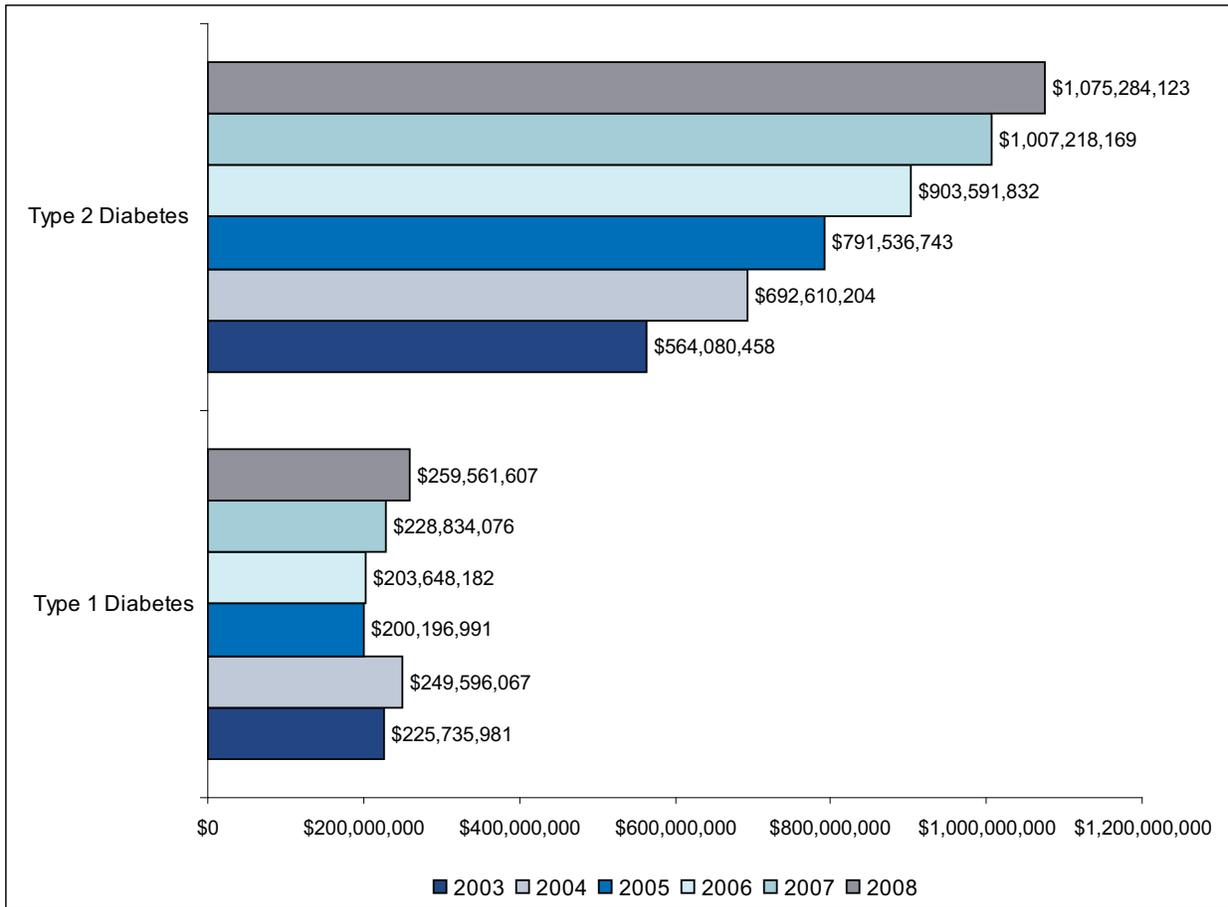


Total hospital charges for selected cancer types have increased each year from 2003 to 2008. In 2008, total hospital charges were highest for colorectal cancer, followed by lung cancer, breast cancer, and cervical cancer.

Data source: THCIC, Texas Department of State Health Services

# Total Hospital Charges

**Figure 62. Total Hospital Charges for Selected Diabetes Diagnoses, Texas, 2003-2008**

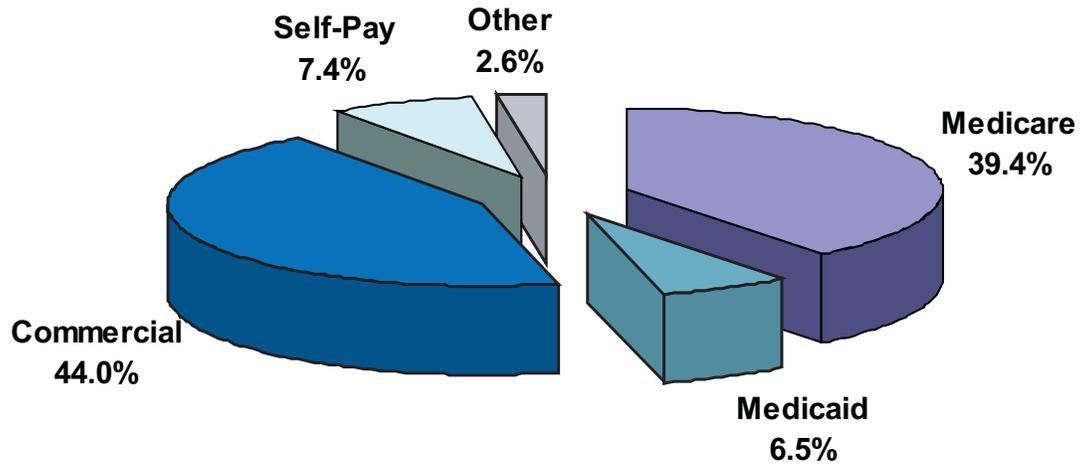


Total hospital charges for type 2 diabetes have increased each year from 2003 to 2008. In 2008, total hospital charges were highest for type 2 diabetes.

Data source: THCIC, Texas Department of State Health Services

## Payment Source

Figure 63. Primary Payment Source for Cancer, Texas, 2008



In 2008, primary payment for cancer-related hospital discharges included Medicare (39.4%), commercial (44.0%), Medicaid (6.5%), self-pay\* (7.4%), and other sources\*\* (2.6%).

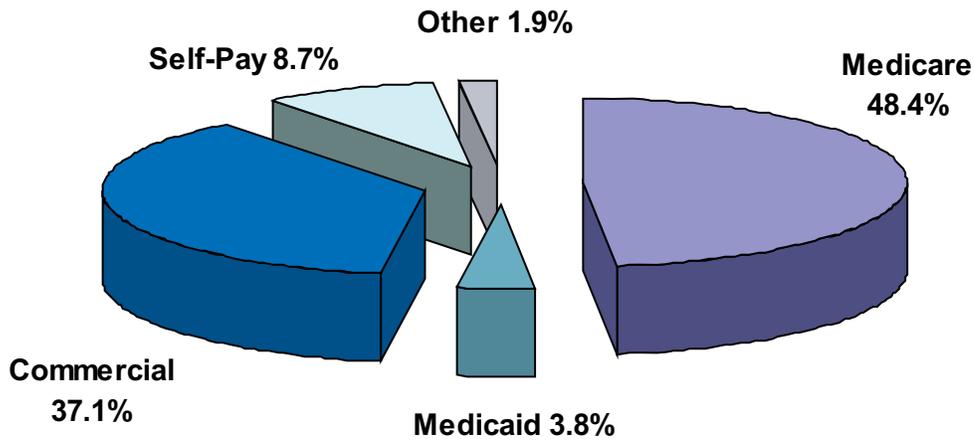
\*Includes charity

\*\*Includes Title V, worker's compensation, other federal program, other non-federal program, and veteran administration plan

Data source: THCIC, Texas Department of State Health Services

## Payment Source

Figure 64. Primary Payment Source for IHD, Texas, 2008

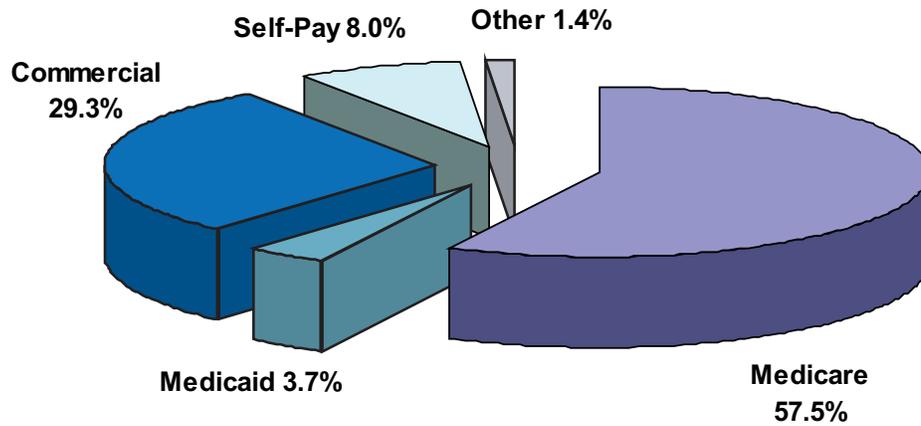


In 2008, primary payment for IHD hospital discharges included Medicare (48.4%), commercial (37.1%), Medicaid (3.8%), self-pay (8.7%), and other sources (1.9%).

Data source: THCIC, Texas Department of State Health Services

## Payment Source

**Figure 65. Primary Payment Source for Ischemic Stroke, Texas, 2008**

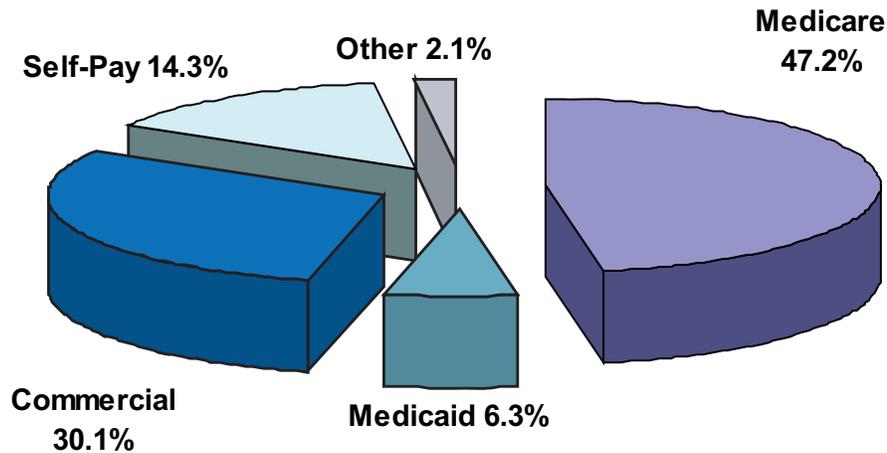


In 2008, primary payment for ischemic stroke hospital discharges included Medicare (57.5%), commercial (29.3%), Medicaid (3.7%), self-pay (8%), and other sources (1.4%).

*Data source: THCIC, Texas Department of State Health Services*

## Payment Source

Figure 66. Primary Payment Source for Hemorrhagic Stroke, Texas, 2008

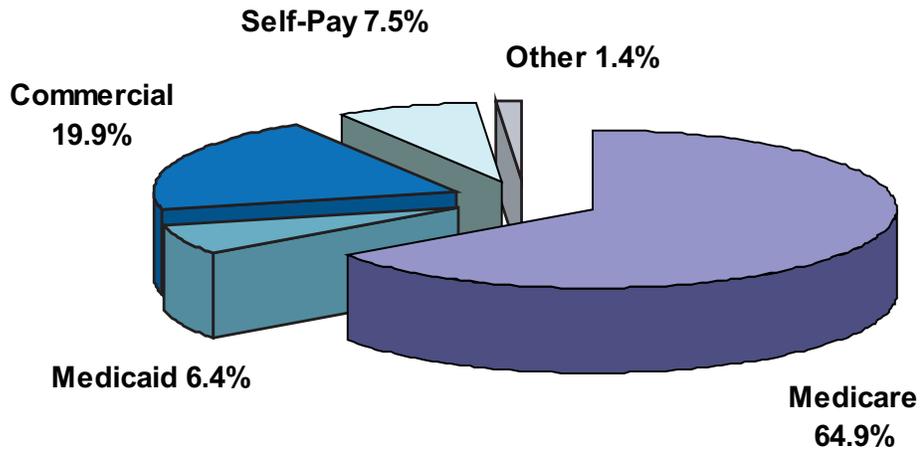


In 2008, primary payment for hemorrhagic stroke hospital discharges included Medicare (47.2%), commercial (30.1%), Medicaid (6.3%), self-pay (14.3%) and other sources (2.1%).

Data source: THCIC, Texas Department of State Health Services

## Payment Source

Figure 67. Primary Payment Source for CHF, Texas, 2008

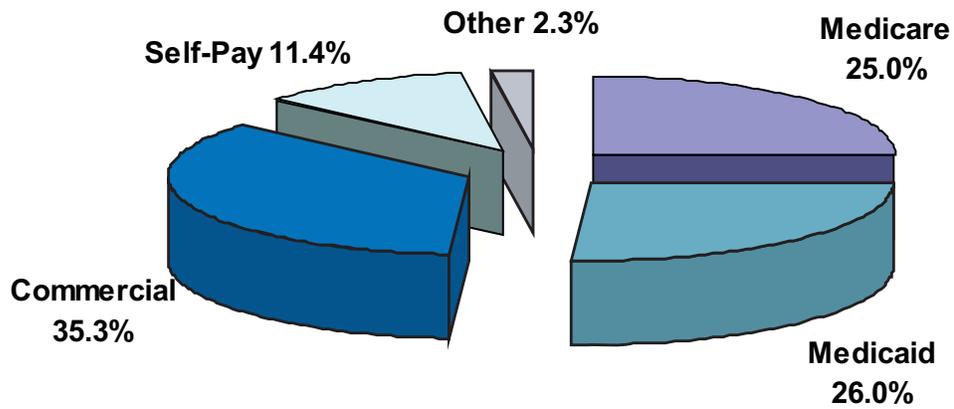


In 2008, primary payment for CHF hospital discharges included Medicare (64.9%), commercial (19.9%), Medicaid (6.4%), self-pay (7.5%), and other sources (1.4%).

Data source: THCIC, Texas Department of State Health Services

## Payment Source

Figure 68. Primary Payment Source for Asthma, Texas, 2008

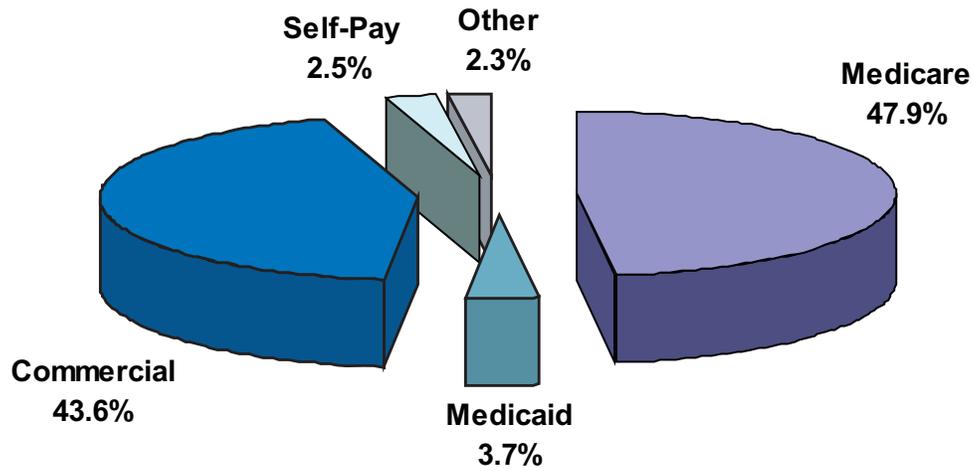


In 2008, primary payment for asthma hospital discharges included Medicare (25%), commercial (35.3%), Medicaid (26%), self-pay (11.4%), and other sources (2.3%).

Data source: THCIC, Texas Department of State Health Services

## Payment Source

Figure 69. Primary Payment Source for Arthritis, Texas, 2008

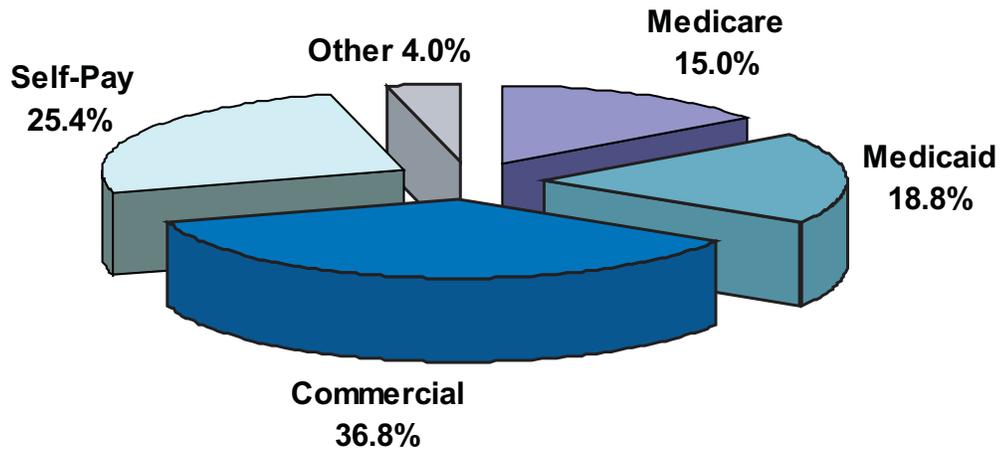


In 2008, primary payment for arthritis hospital discharges included Medicare (47.9%), commercial (43.6%), Medicaid (3.7%), self-pay (2.5%), and other sources (2.3%).

Data source: THCIC, Texas Department of State Health Services

## Payment Source

Figure 70. Primary Payment Source for Type 1 Diabetes, Texas, 2008

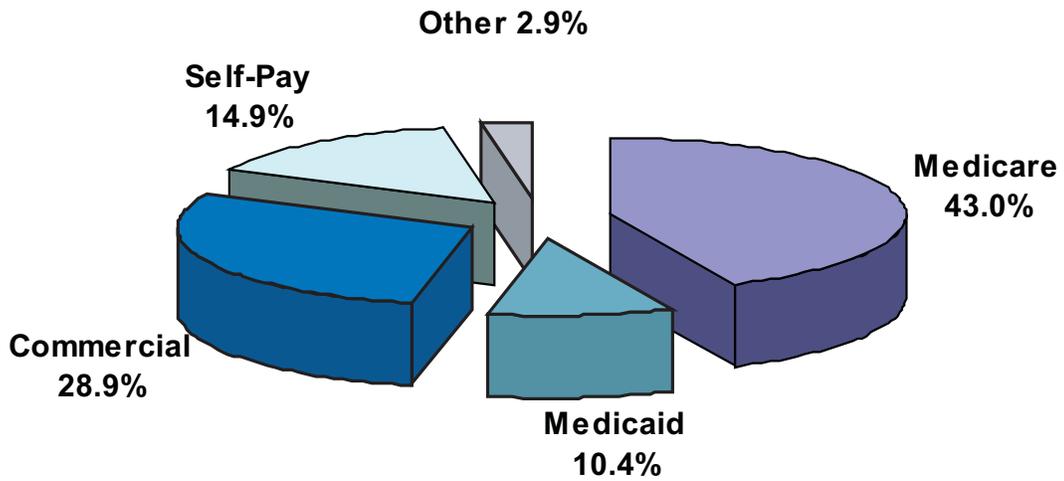


In 2008, primary payment for type 1 diabetes hospital discharges included Medicare (15%), commercial (36.8%), Medicaid (18.8%), self-pay (25.4%), and other sources (4.0%).

Data source: THCIC, Texas Department of State Health Services

## Payment Source

Figure 71. Primary Payment Source for Type 2 Diabetes, Texas, 2008



In 2008, primary payment for type 2 diabetes hospital discharges included Medicare (43.0%), commercial (28.9%), Medicaid (10.4%), self-pay (14.9%), and other sources (2.9%).

Data source: THCIC, Texas Department of State Health Services

## References

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